

SAMSUNG

LCD-Monitor

Chassis	Model
LME20WS	206BW
LME22WS	226BW
LME20AS	206NW
LME22AS	226NW
LME22VS	216BW 223BW

SERVICE Manual

LCD Monitor



Fashion Feature

- Magic Bright
- Magic Color
- Integrated UI applied
- Hidden Function Key
- Lustrous Appearance (Design)

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LME20WS/LME22WS/LME20AS/LME22AS/LME22VS
Service Manual

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Contents

1. Precautions	1-1
1-1 Safety Precautions	1-1
1-2 Servicing Precautions	1-2
1-3 Electrostatically Sensitive Devices (ESD) Precautions	1-2
1-4 Installation Precautions	1-3
2. Product specifications	2-1
2-1 Fashion Feature	2-1
2-2 Feature	2-1
2-3 LME20WS Specifications	2-2
2-4 LME22WS Specifications	2-3
2-5 LME20AS Specifications	2-4
2-6 LME22AS Specifications	2-5
2-7 LME22VS Specifications	2-6
2-8 Spec Comparison	2-7
2-9 Option Specification	2-8
3. Alignments and Adjustments	3-1
3-1 Required Equipment	3-1
3-2 Automatic Color Adjustment	3-1
3-3 DDC EDID Data Input	3-1
3-4 Service Function Spec.	3-2
3-5 Hidden Key list	3-3
3-6 EDID Installation with Windows Program	3-4
3-7 Execution Items after replacing the main board	3-4
4. Troubleshooting	4-1
4-1 No Power	4-1
4-2 No Video (PC Analog Signal)	4-3
4-3 No Video (PC Digital Signal)	4-5
5. Exploded View and Parts List	5-1
6. Electrical Parts List	6-1
7. Block Diagram	7-1

Contents

8. Wiring Diagram	8-1
9. Schematic Diagrams	9-1
9-1 Schematic Diagrams	9-1
9-2 Schematic Diagrams	9-3
10. Operating Instructions and Installation	10-1
10-1 Front	10-1
10-2 Rear	10-2
10-3 Using the Stand	10-4
11. Disassembly and Reassembly	11-1
11-1 Disassembly	11-1
11-2 Reassembly	11-3
12. PCB Diagram	12-1
13. Circuit Descriptions	13-1
13-1 Block description	13-1
13-2 Block operating	13-2
14. Reference Information	14-1
14-1 Technical Terms	14-1
14-2 Pin Assignments	14-4
14-3 Timing Chart	14-5
14-4 Preset Timing Modes	14-6
14-5 Panel Description	14-7



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1 Precautions

Follow these safety, servicing and ESD precautions to prevent damage and to protect against potential hazards such as electrical shock.

1-1 Safety Precautions

1-1-1 Warnings

1. For continued safety, do not attempt to modify the circuit board.
2. Disconnect the AC power and DC power jack before servicing.

1-1-2 Servicing the LCD Monitor

1. When servicing the LCD Monitor, Disconnect the AC line cord from the AC outlet.
2. It is essential that service technicians have an accurate voltage meter available at all times. Check the calibration of this meter periodically.

1-1-3 Fire and Shock Hazard

Before returning the monitor to the user, perform the following safety checks:

1. Inspect each lead dress to make certain that the leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the monitor.
2. Inspect all protective devices such as nonmetallic control knobs, insulating materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor-capacitor networks, mechanical insulators, etc.
3. Leakage Current Hot Check (Figure 1-1):

WARNING : Do not use an isolation transformer during this test.

Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI C101.1, *Leakage Current for Appliances*), and Underwriters Laboratories (UL Publication UL1410, 59.7).

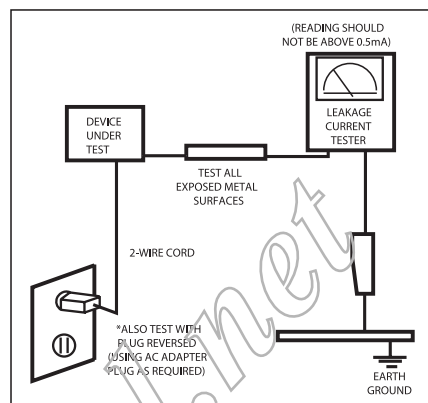


Figure 1-1 Leakage Current Test Circuit

4. With the unit completely reassembled, plug the AC line cord directly into a 120V AC outlet. With the unit's AC switch first in the ON position and then OFF, measure the current between a known earth ground (metal water pipe, conduit, etc.) and all exposed metal parts, including: metal cabinets, screwheads and control shafts. The current measured should not exceed 0.5 milliamp. Reverse the power-plug prongs in the AC outlet and repeat the test.

1-1-4 Product Safety Notices

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection. The protection they give may not be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by \triangle on schematics and parts lists. A substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire and/or other hazards. Product safety is under review continuously and new instructions are issued whenever appropriate.

1 Precautions

1-2 Servicing Precautions

- WARNING:** An electrolytic capacitor installed with the wrong polarity might explode.
- Caution:** Before servicing units covered by this service manual, read and follow the Safety Precautions section of this manual.
- Note:** If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions, always follow the safety precautions.

1-2-1 General Servicing Precautions

1. Always unplug the unit's AC power cord from the AC power source and disconnect the DC Power Jack before attempting to:
(a) remove or reinstall any component or assembly, (b) disconnect PCB plugs or connectors, (c) connect a test component in parallel with an electrolytic capacitor.
2. Some components are raised above the printed circuit board for safety. An insulation tube or tape is sometimes used. The internal wiring is sometimes clamped to prevent contact with thermally hot components. Reinstall all such elements to their original position.
3. After servicing, always check that the screws, components and wiring have been correctly reinstalled. Make sure that the area around the serviced part has not been damaged.
4. Check the insulation between the blades of the AC plug and accessible conductive parts (examples: metal panels, input terminals and earphone jacks).
5. Insulation Checking Procedure: Disconnect the power cord from the AC source and turn the power switch ON. Connect an insulation resistance meter (500 V) to the blades of the AC plug.
The insulation resistance between each blade of the AC plug and accessible conductive parts (see above) should be greater than 1 megohm.
6. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the positive lead; always remove the instrument's ground lead last.

1-3 Electrostatically Sensitive Devices (ESD) Precautions

Some semiconductor (solid state) devices can be easily damaged by static electricity. Such components are commonly called Electrostatically Sensitive Devices (ESD). Examples of typical ESD are integrated circuits and some field-effect transistors. The following techniques will reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor components or assemblies, drain the electrostatic charge from your body by touching a known earth ground. Alternatively, wear a discharging wrist-strap device. To avoid a shock hazard, be sure to remove the wrist strap before applying power to the monitor.
2. After removing an ESD-equipped assembly, place it on a conductive surface such as aluminum foil to prevent accumulation of an electrostatic charge.
3. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESDs.
4. Use only a grounded-tip soldering iron to solder or desolder ESDs.
5. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ESDs.
6. Do not remove a replacement ESD from its protective package until you are ready to install it. Most replacement ESDs are packaged with leads that are electrically shorted together by conductive foam, aluminum foil or other conductive materials.
7. Immediately before removing the protective material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.
Caution: Be sure no power is applied to the chassis or circuit and observe all other safety precautions.
8. Minimize body motions when handling unpackaged replacement ESDs. Motions such as brushing clothes together, or lifting your foot from a carpeted floor can generate enough static electricity to damage an ESD.

1-4 Installation Precautions

1. For safety reasons, more than two people are required for carrying the product.
2. Keep the power cord away from any heat emitting devices, as a melted covering may cause fire or electric shock.
3. Do not place the product in areas with poor ventilation such as a bookshelf or closet. The increased internal temperature may cause fire.
4. Bend the external antenna cable when connecting it to the product. This is a measure to protect it from being exposed to moisture. Otherwise, it may cause a fire or electric shock.
5. Make sure to turn the power off and unplug the power cord from the outlet before repositioning the product. Also check the antenna cable or the external connectors if they are fully unplugged. Damage to the cord may cause fire or electric shock.
6. Keep the antenna far away from any high-voltage cables and install it firmly. Contact with the highvoltage cable or the antenna falling over may cause fire or electric shock.
7. When installing the product, leave enough space (10cm) between the product and the wall for ventilation purposes.
A rise in temperature within the product may cause fire.

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Memo

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3 调整和调节

维修手册本章说明如何使用 RS232 JIG。

该功能为更换 AD 板所需。

3-1 所需的设备

以下设备为调整显示器所需。

- 装有Windows 95、Windows 98、Windows 2000、 Windows XP或Windows NT的计算机。
- MTI-2031 DDC 管理工具

3-2 自动颜色调节

对于输入图像，使用 16 级灰度图或使用黑色和白色的任何图案。

1. 选择语言“英语”。
2. 按下“（确定/来源）”键 5 秒。

3-3 DDC EDID数据输入

1. 在更换 AD 印刷电路板时，输入 DDC EDID 数据。
2. 由 HQ 质量控制部门接收/下载适于该机型的 DDC 文件。

安装以下装置（图 1）并输入数据。

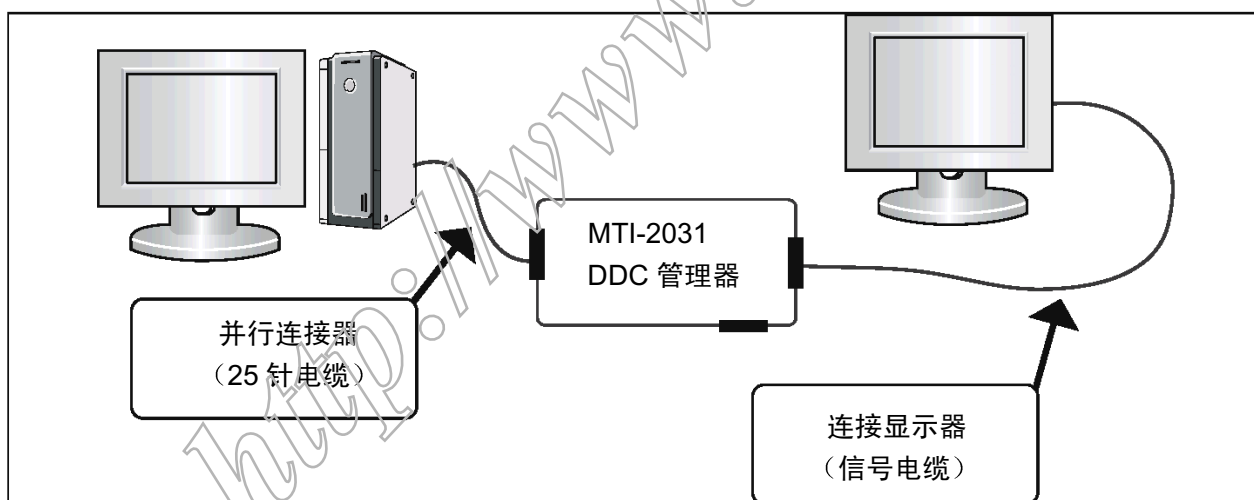


图 1

3-4 更换显示屏时在屏显示调节

1. 调整亮度和对比度到 0。然后，按下（确定/来源）键 5 秒。
维修功能 OSD 出现在屏幕上。
2. 按 + 键将光标置于显示屏上。按菜单键 5 秒。

3-5 仅更换灯时在屏显示调节

1. 调整亮度和对比度到 0。然后，按退出键 5 秒。
维修功能 OSD 出现在屏幕上。
2. 按 + 键。选择上灯并按菜单键 5 秒。
然后，选择下灯并按菜单键 5 秒。

-注意：如欲了解维修功能的详情，请务必阅读以下说明。

3-4 维修功能规格

3-4-1 如何显示维修功能OSD

1. 在将亮度和对比度都设为“0”后，按下“确定”按钮 5 秒以上。
2. 维修功能显示如下。

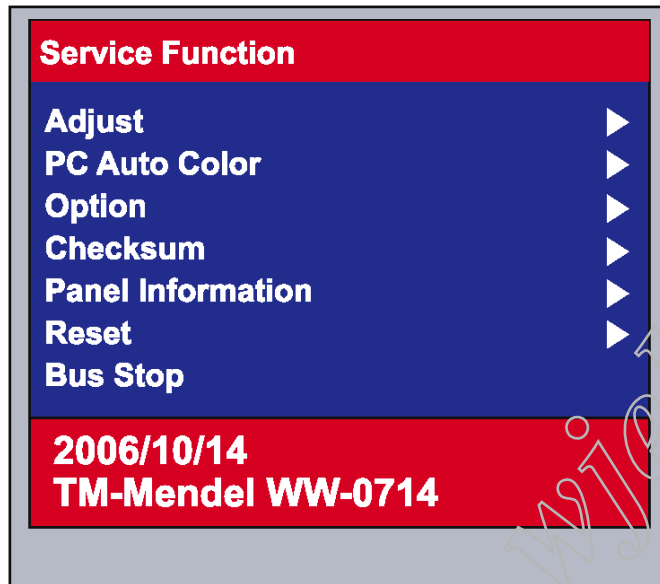


图 2

3-4-2 如何控制维修功能OSD

1. 显示器开机时间：开机时间
2. 显示屏周期：显示屏开/关时间（关机、模式变化、DPMS 开/关...）
3. 显示屏：显示屏开启时间
(每次更换显示屏时，按下菜单键 5 秒，以便添加到 Ch 数中，Ch 数表示更换显示屏的次数。)
4. 上灯：上灯开启时间
(当更换上灯时，按下菜单，以便添加到 Ch 数中，Ch 数表示更换灯的次数。)
5. 下灯：下灯开启时间
(当更换上灯时，按下菜单，以便添加到 Ch 数中，Ch 数表示更换灯的次数。)
6. 自动调节：如果将自动调节菜单设置为开，当首次改变模式时，执行自动调节功能。默认状态为开启。
7. 像素移动：未用
8. 国家：用本菜单可以将 OSD 语言改为世界各地、韩语、汉语或日语。

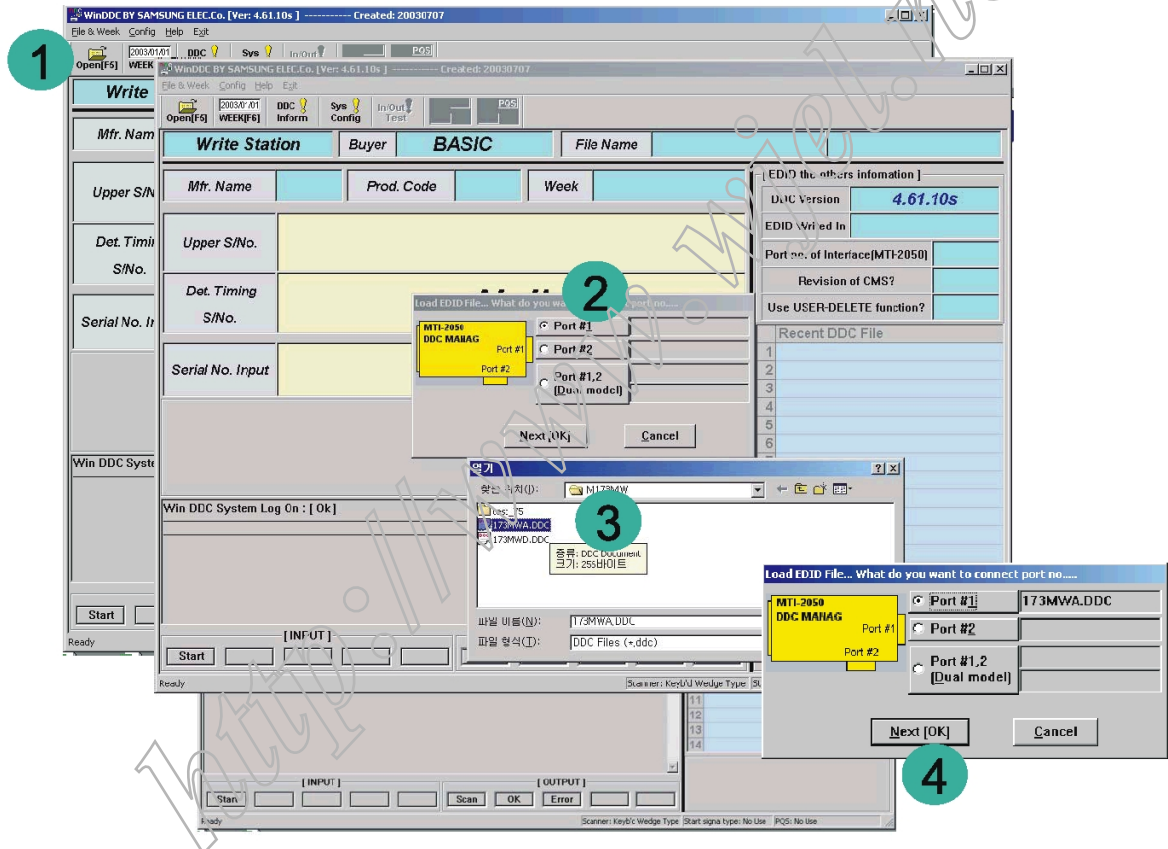
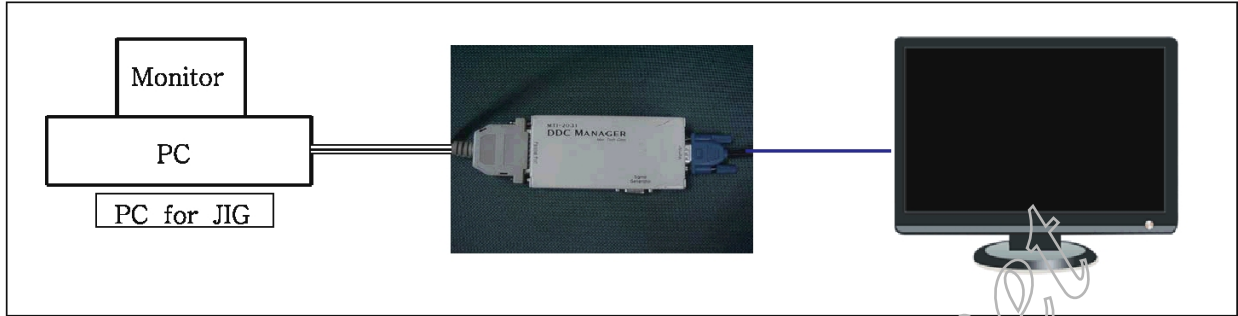
可以用“+”键操纵菜单，并按下“菜单键”5 秒进行调节（显示屏、上灯和下灯菜单）。按下“-”键，还可以控制自动调节、像素移动和国家菜单。

3-5 隐藏键列表

序号	功能	措施方法
1	隐藏维修功能	-在将亮度和对比度设为“0”后，按下“菜单”按钮 5 秒以上。 -显示维修功能。
2	工厂预设	-当打开菜单（任何菜单）时，按下“确定”键 5 秒以上。 -屏幕闪烁，然后所有菜单返回工厂默认值。
3	自动校准	对于模拟图像，在 16 级灰度图或使用黑色和白色的任何图案以及任何模式中。（推荐 16 级灰度图和 XGA 模式） 1. 推 OSD 菜单按钮，打开 OSD。 2. 选择语言“英语”。 3. 在 5 秒内按下确定按钮。 4. 屏幕闪烁，自动校准完成。
4	OSD 锁	-按下菜单键 5 秒以上，然后锁定 OSD。 -如欲给 OSD 解锁，按下菜单键 5 秒以上。

3-6 DDC输入方法（Windows程序）

在更换主板后，应通过 DDC 控制装置输入 DDC。
连接方法参照下图。



1. 在计算机中安装 Winddc.exe 程序。
2. 点击 Winddc 图标。
3. 打开文件。
4. 选择端口#1。
装载 DDC 文件名
- “206BW.ddc”
点击下一步（确定）按钮。

Write Station		Buyer	SAMSUNG	File Name	SM930BA
Mfr. Name	SAM	Prod. Code	CB00	Week	47th of 2003
Upper S/No.					
Det. Timing S/No.	H1AK500000				
Serial No. Input	H1AK500010				CheckSum 0x6D

EDID the others Information	
DDC Version	4.61.10s
EDID Writed In	EEPROM
Port no. of Interface(MTI-2050)	#1
Revision of CMS?	No CMS
Use USER-DELETE function?	No

Recent DDC File	
1	#1: 173MWA.DDC, #2
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	

- 5: 输入显示器系列号，并按下确定键。
在模拟输入后，在进行数字输入时请进行#2~5。

3-7 更换主板后执行的项目

更换主板后

1. 自动校准
2. EDID 安装（模拟和数字）
3. 工厂复位

备忘录

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14 Reference Information

14-1 Technical Terms

- TFT-LCD

(Thin film Transistor Liquid Crystal Display)

ADC(Analog to Digital Converter)

This is a circuit that converts from analog signal to digital signals.

- PLL(Phase Locked Loop)

During progressing ADC, Device makes clock synchronizing HSYNC with Video clock

- Inverter

Device that supplies Power to LCD panel lamp.
This device generates about 1,500~2,000V.

- SMPS(Switching Mode Power Supply)

Switching Mode Power supply. This design technology is used to step up/down the input power by switching on/off

- FRC(Frame Rate Controller)

Technology that change image frame quantity displayed on screen for one second.

Actually TFT-LCD panel require 60 pcs of frame for one second.

so, this technology is needed to convert input image to 60 pcs regardless input frame quantity.

- Image Scaler

Technology that convert various input resolution to other resolution.(ex. 640*480 to 1024*768)

- Auto Configuration(Auto adjustment)

This is an algorithm to adjust monitor to optimum condition by pushing one key.

- OSD(On Screen Display)

On screen display. customer can control the screen easily with this.

- Image Lock

This means "Fineness adjustment" in LCD Monitor, the features are "Fine" and "Coarse"

- FINE

"Fine" adjustment is used to adjust visibility by control phase difference.

- COARSE

This is a adjustment by tuning with Video colck and PLL clock.

- DVI (Digital Visual Interface)

This provides a high speed digital connection for visual data types that is display technology independent. this interface is primarily focused at providing a connection between a computer and its display device.

- L.V.D.S.(Low Voltage Differential Signaling)

a kind of transmission method for Digital.
It can be used from Main PBA to Panel.

- DVI (Digital Visual Interface)

This provides a high speed digital connection for visual data types that is display technology independent. this interface is primarily focused at providing a connection between a computer and its display device.

- T.M.D.S

(Transition minimized Differential Signaling)

a kind of transmission method for Digital.
It can be used from Video card to Main PBA.

- DDC(Display data channel)

It is a communication method between Host Computer and related equipment.
It can make it Plug and Play between PC and Monitor.

- EDID

Extended Display Identification Data PC can recognize the monitor information as Product data, Product name, Display mode, Serial number and Signal source, etc through DDC Line communicating with PC and Monitor.

- Dot Pitch

The image on a monitor is composed of red, green and blue dots. The closer the dots, the higher the resolution. The distance between two dots of the same color is called the 'Dot Pitch'. Unit: mm

- Vertical Frequency

The screen must be redrawn several times per second in order to create and display an image for the user. The frequency of this repetition per second is called Vertical Frequency or Refresh Rate. Unit: Hz

Example: If the same light repeats itself 60 times per second, this is regarded as 60 Hz.

- Horizontal Frequency

The time to scan one line connecting the right edge to the left edge of the screen horizontally is called Horizontal Cycle. The inverse number of the Horizontal Cycle is called Horizontal Frequency. Unit: kHz

- Interlace and Non-Interlace Methods

Showing the horizontal lines of the screen from the top to the bottom in order is called the Non-Interlace method while showing odd lines and then even lines in turn is called the Interlace method. The Non-Interlace method is used for the majority of monitors to ensure a clear image. The Interlace method is the same as that used in TVs.

- Plug & Play

This is a function that provides the best quality screen for the user by allowing the computer and the monitor to exchange information automatically. This monitor follows the international standard VESA DDC for the Plug & Play function.

- Resolution

The number of horizontal and vertical dots used to compose the screen image is called 'resolution'. This number shows the accuracy of the display. High resolution is good for performing multiple tasks as more image information can be shown on the screen.

Example: If the resolution is 1280 x 1024, this means the screen is composed of 1280 horizontal dots (horizontal resolution) and 1024 vertical lines (vertical resolution).

- S-Video

Short for "Super Video." S-Video allows up to 800 lines of horizontal resolution, enabling high-quality video.

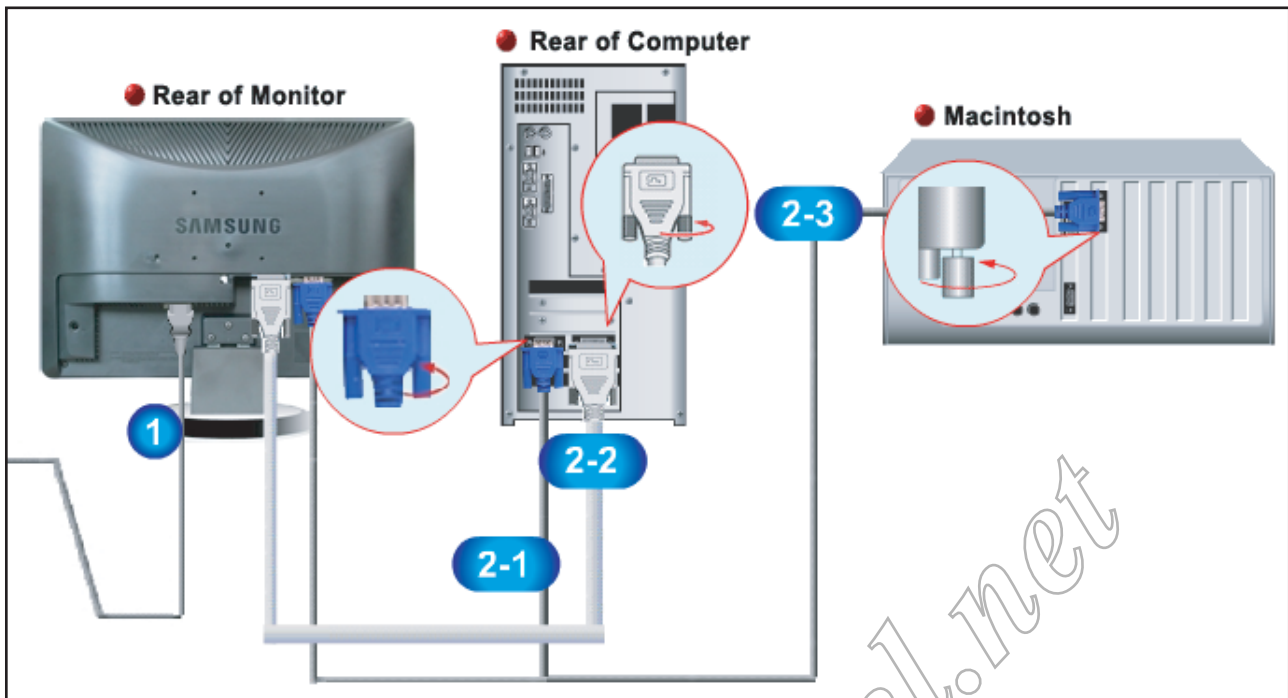
- External Device Input

External device input refers to video input from such external video devices as VCRs, camcorders and DVD players, separate from a TV broadcast.

- DVD

A type of digital disk technology that takes up only the benefits of CD and LD, to implement a high resolution/quality, which enables the user to enjoy clearer images.

- Connecting the Monitor



1. Connect the DC adapter for your monitor to the power port on the back of the monitor. Plug the power cord for the monitor into a nearby outlet.
- 2-1. Using the D-sub (Analog) connector on the video card.
Connect the signal cable to the 15-pin, D-sub connector on the back of your monitor.



- 2-2. Using the DVI (Digital) connector on the video card.
Connect the DVI cable to the DVI port on the back of your monitor.



- 2-3. Connected to a Macintosh.
Connect the monitor to the Macintosh computer using the D-SUB connection cable.
3. Turn on your computer and monitor. If your monitor displays an image, installation is complete.

- You may get a blank screen depending on the type of video card you are using, if you connect simultaneously both the D-Sub and DVI cables to one computer.

- If you properly connect your monitor using the DVI connector but get a blank screen, check to see if the monitor status is set to analog. Press power button to have the monitor double-check the input signal source.

14-2 Pin Assignments

Pin No.	Sync Type	15-Pin D-Sub Signal Cable Connector		
		Separate	Composite	Sync-on-green
1		Red	Red	Red
2		Green	Green	Green + H/V Sync.
3		Blue	Blue	Blue
4		GND	GND	GND
5		DDC Return (GND)	DDC Return (GND)	DDC Return (GND)
6		GND-R	GND-R	GND-R
7		GND-G	GND-G	GND-G
8		GND-B	GND-B	GND-B
9		DDC Power Input (+5V)	DDC Power Input (+5V)	DDC Power Input (+5V)
10		Self Raster	Self Raster	Self Raster
11		GND	GND	GND
12		Bi-Dr Data (SDA)	Bi-Dr Data (SDA)	Bi-Dr Data (SDA)
13		H-Sync.	H/V-Sync.	Not Used
14		V-Sync.	Not Used	Not Used
15		DDC Clock (SCL)	DDC Clock (SCL)	DDC Clock (SCL)

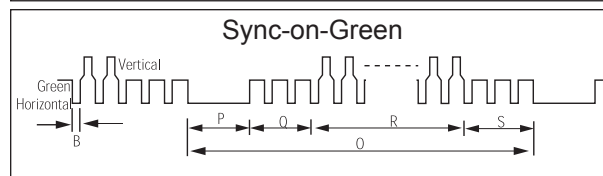
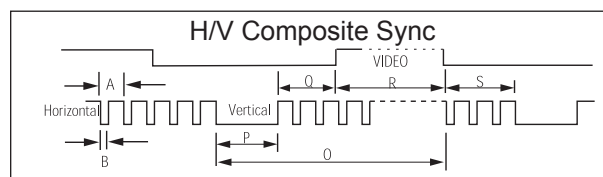
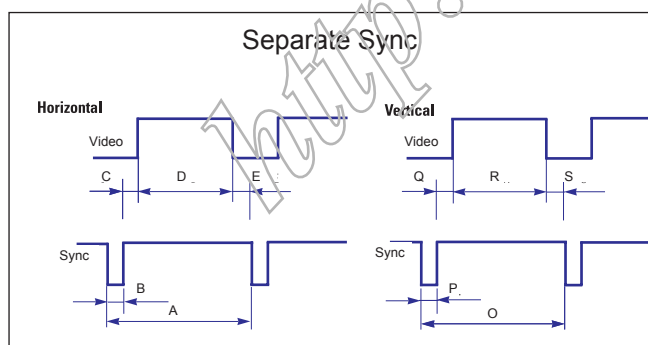
Pin No.	Sync Type	24P DVI-D		
1		Rx2-	13	No Connection
2		Rx2+	14	+5V_M
3		GND	15	Self Raster
4		No Connection	16	+5V_M
5		No Connection	17	Rx0-
6		DDC Clock (SCL)	18	Rx0+
7		DDC Data (SDA)	19	NC
8		NC	20	No Connection
9		Rx1-	21	No Connection
10		Rx1+	22	NC
11		NC	23	RxC+
12		No Connection	24	RxC-

14-3 Timing Chart

- This section of the service manual describes the timing that the computer industry recognizes as standard for computer-generated video signals.

Table 14-1 Timing Chart

Mode Timing	IBM		VESA						
	VGA2/ 70 Hz 720 x 400	VGA3/ 60 Hz 640 x 480	640/75 Hz 640x480	800/60 Hz 800x600	800/75 Hz 800x600	1024/60 Hz 1024x768	1024/75 Hz 1024x768	1280/60 Hz 1280x1024	1280/75 Hz 1280x1024
fH (kHz)	31.469	31.469	37.500	37.879	46.875	48.363	60.023	63.981	79.975
A μ sec	31.777	31.778	26.667	26.400	21.333	20.677	16.660	11.852	12.504
B μ sec	3.813	3.813	2.032	3.200	1.616	2.092	1.219	1.037	1.067
C μ sec	1.589	1.589	3.810	2.200	3.232	2.462	2.235	2.296	1.837
D μ sec	26.058	26.058	20.317	20.000	16.162	15.754	13.003	9.259	9.481
E μ sec	0.318	0.318	0.508	0.000	0.323	0.369	0.203	0.000	0.119
fV (Hz)	70.087	59.940	75.000	60.317	75.000	60.004	75.029	60.020	75.025
O msec	14.268	16.683	13.333	16.579	13.333	16.666	13.328	16.005	13.329
P msec	0.064	0.064	0.080	0.106	0.064	0.124	0.050	0.047	0.038
Q msec	0.858	0.794	0.427	0.607	0.448	0.600	0.466	0.594	0.475
R msec	13.155	15.761	12.800	15.840	12.800	15.880	12.795	15.630	12.804
S msec	0.191	0.064	0.027	0.0261	0.021	0.062	0.017	0.016	0.013
Clock Freq. (MHz)	28.322	26.175	31.500	40.000	49.500	75.000	78.750	108.000	135.000
Polarity H.Sync	Negative	Negative	Negative	Positive	Positive	Negative	Positive	Positive	Positive
V.Sync	Positive	Negative	Negative	Positive	Positive	Negative	Positive	Positive	Positive
Remark	Separate	Separate	Separate	Separate	Separate	Separate	Separate	Separate	Separate



A : Line time total

B : Horizontal sync width

C : Back porch

D : Active time

E : Front porch

O : Frame time total

P : Vertical sync width

Q : Back porch

R : Active time

S : Front porch

14-4 Preset Timing Modes

- If the signal transferred from the computer is the same as the following Preset Timing Modes, the screen will be adjusted automatically. However, if the signal differs, the screen may go blank while the power LED is on. Refer to the video card manual and adjust the screen as follows.

Table 1. Preset Timing

Display Mode	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
MAC, 640 x 480	35.000	66.667	30.240	-/-
MAC, 832 x 624	49.726	74.551	57.284	-/-
IBM, 640 x 350	31.469	70.086	25.175	+/-
IBM, 640 x 480	31.469	59.940	25.175	-/-
IBM, 720 x 400	31.469	70.087	28.322	-/+
VESA, 640 x 480	37.500	75.000	31.500	-/-
VESA, 640 x 480	37.861	72.809	31.500	-/-
VESA, 800 x 600	35.156	56.250	36.000	+, -/+, -
VESA, 800 x 600	37.879	60.317	40.000	+/+
VESA, 800 x 600	46.875	75.000	49.500	+/+
VESA, 800 x 600	48.077	72.188	50.000	+/+
VESA, 1024 x 768	48.363	60.004	65.000	-/-
VESA, 1024 x 768	56.476	70.069	75.000	-/-
VESA, 1024 x 768	60.023	75.029	78.750	+/+
VESA, 1280 x 1024	63.981	60.020	108.00	+/+
VESA, 1280 x 1024	79.976	75.025	135.00	+/+
VESA, 1600 x 1200	75.000	60.000	162.00	+/+

Horizontal Frequency

The time to scan one line connecting the right edge to the left edge of the screen horizontally is called Horizontal Cycle and the inverse number of the Horizontal Cycle is called Horizontal Frequency. Unit: kHz

Vertical Frequency

Like a fluorescent lamp, the screen has to repeat the same image many times per second to display an image to the user. The frequency of this repetition is called Vertical Frequency or Refresh Rate. Unit: Hz

14-5 Panel Description

Maker	VENDOR P/N	PANEL_CODE	PANEL_ABB	STICKER_CODE	Remarks
SEC	LT140X1-002	BN07-00004A	SA	BN68-00239H	-
SEC	LT150XS-L01	BN07-00009A	SB		-
SEC	LT150XS-L01-B	BN07-00022A	SC		-
SEC	LTM150XS-L02	BN07-00005A	SD		-
SEC	LT181E2-132	BN07-00001A	SE		-
SEC	LT150XS-T01	BN07-00010A	SF		-
SEC	LTM181E3-132	BN07-00019A	SG		-
SEC	LT170E2-131	BN07-10001D	SH		-
SEC	LT181E2-131	BN07-10001E	SJ		-
SEC	LTM170E4-L01	BN07-00018A	SK		-
SEC	LTM240W1-L01	BN07-00015A	SL		-
SEC	LTM213U3-L01	BN07-00016A	SM		-
SEC	LTM150XH-L01	BN07-00026A	SN		-
SEC	LTM150XH-L03	BN07-00027A	SP		-
SEC	LTM150XS-L01	BN07-00032A	SQ		DELL(ZPD)
SEC	LTM181E4-L01	BN07-00034A	SR		PVA
SEC	LTM170EH-L01	BN07-00036A	SS		TN
SEC	LTM170E5-L01	BN07-00037A	SU		PVA
SEC	LTM150XH-L11	BN07-00041A	SV		-
SEC	LTM213U4-L01	BN07-00039A	SW		PVA
SEC	LTM150XH-L01(ZPD)	BN07-00045A	SX		ZPD
SEC	LTM150XH-L04	BN07-00046A	SY		New panel with high brightness
SEC	LTM170W1-L01	BN07-00047A	SZ		Panel for TV
SEC	LTM150XH-L06	BN07-00053A	EA		Panel for TV/High luminance for 450cd , SONY&EOS Team Panel for TV
SEC	LTM153W1-L01	BN07-00054A	EB		Use NIKE MODEL
SEC	LTM170EH-L05	BN07-00055A	EC		Panel EOS proj. for high brightness of 17" EH-L05
SEC	LTM170E5-L03	BN07-00056A	ED		Dell 1702FP pro.E4. EH mechanical Compatible
SEC	LTM190E1-L01	BN07-00057A	EE		DELL 19"0 FP
SEC	LTM181E5-L01	BN07-00061A	EF		18" narrow bezel GH18PS
SEC	LTM150XP-L01	BN07-00065A	EG		AMLCD PVA-PANEL
SEC	LTM240W1-L02	BN07-00062A	EH		Panel for 15" Wide TV
SEC	LTM170EU-L01	BN07-00071A	EJ		Slim design, TN
SEC	LTM170E5-L04	BN07-00072A	EK		E5-L04 6-bits FRC... for IBM
SEC	LTA220W1-L01	BN07-00074A	EL		Panel for 22" TV
SEC	LTM170E6-L02	BN07-00075A	EM		AMLCD Narrow & slim design 17" PVA mode
SEC	LTM170W1-L01	BN07-00082A	EN		LTM170W1-L01 ZPD panel
SEC	LTM170EH-L01	BN07-00080A	EP		LTM170EH-L01 ZPD panel
SEC	LTM170E5-L01	BN07-00081A	EQ		LTM170E5-L01 ZPD panel
SEC	LTM170EH-L05	BN07-00083A	ER		LTM170EH-L05 ZPD panel
SEC	LTM170E5-L03	BN07-00084A	ES		LTM170E5-L03 ZPD panel
SEC	LTM170EU-L01	BN07-00085A	ET		LTM170EU-L01 ZPD panel
SEC	LTM170E5-L04	BN07-00086A	EU		LTM170E5-L04 ZPD panel
SEC	LTM170E6-L02	BN07-00087A	EV		LTM170E6-L02 ZPD panel
SEC	LTM150XH-L06	BN07-00091A	EW		Color coordinates change for LCD TV
SEC	LTM153W1-L01	BN07-00092A	EX		AMLCD WIDE 15" 9/10
SEC	LTM170W1-L01	BN07-00100A	EY		Color Coordinates change code management
SEC	LTM170EH-L05	BN07-00097A	EZ		LTM170E5-L05 Color Coordinates Change Panel Code
SEC	LTA400W1-L01	BN07-00109A	S1		PANEL of AMLCD 40" TV
SEC	LTM153W1-L01	BN07-00110A	S2		Color coordinates change 0.280/0.290, 10000k & ZPD Panel
SEC	LTM150XH-L06	BN07-00111A	S3		Color coordinates change 0.280/0.290, 10000k & ZPD Panel
SEC	LTM170W1-L01	BN07-00112A	S4		Color coordinates change 0.280/0.290, 10000k & ZPD Panel
SEC	LTM170EH-L05	BN07-00113A	S5		Color coordinates change 0.280/0.290, 10000k & ZPD Panel
SEC	LTM220W1-L01	BN07-00114A	S6		ZPD Panel for AMLCD 22" TV
SEC	LTM150XH-L06	BN07-00117A	S7		ZPD Panel code
SEC	LTM153W1-L01	BN07-00118A	S8		ZPD Panel code
SEC	LTM170WP-L01	BN07-00119A	S9		PVA Panel for NIKE
SEC	LTM213U4-L01	BN07-00039A	E1		21.3" NARROW
SEC	LTA260W1-L01	BN07-00121A	E2		VENUS
SEC	LTA220W1-L01	BN07-00074B	E3		"Panel B-level panel code for 22" TV Panel "
SEC	LTA320W1-L01	BN07-00108A	E4		"Panel for AMLCD 32" TV"
SEC	LTM213U4-L01	BN07-00124A	E5		NARROW BEZEL 21 " PANEL
SEC	LTM170E6-L04	BN07-00129A	E6		"HIGHLAND 17"" LOW PANEL (Panel only for TCO03)"
SEC	LTM190E1-L01	BN07-00088A	E7		LTM190E1-L01 ZPD panel
SEC	M150X4-L06	BN07-00137A	E8		15" Narrow & Slim panel
SEC	LTA170V1	BN07-00139A	E9		"17"" Panel for Muse 4:3 VGA TV"
SEC	LTM190E1-L02	BN07-00128A	E10		"New Panel from AMLCD, Specification : 6bit Driver IC"
SEC	LTM170EX-L01	BN07-00143A	E11		"Development new Panel from AMLCD"
SEC	LTM170E8-L01	BN07-00144A	E12		"Development new Panel from AMLCD"
SEC	LTM170E6-L04	BN07-00129B	E13		"ZPD panel for AMLCD (Panel only for TCO03)"
SEC	LTA320W1-L02	BN07-00108B	E14		"Creat B-level Panel code for AMLCD 32"" TV"
SEC	LTM190E1-L03	BN07-00151A	E15		"Development new 19"" Panel form AMLCD (Panel only for TCO03)"
SEC	LTM240W1-L03	BN07-00134A	E16		"AMLCD 24"" panel development"
SEC	LTM190E1-L02	BN07-00128B	E17		"New Panel from AMLCD, Specification : 6bit Driver IC(ZPD)"
SEC	LTM190E4-L01	BN07-00145A	E18		"AMLCD 24"" new panel development"
SEC	LTM170E8-L01	BN07-00158A	E19		"ZPD code derivation"
SEC	LTM170EX-L01	BN07-00159A	E20		"ZPD code derivation"
SEC	LTM190E1-L03	BN07-00151B	E21		"Creat new panel code for AMLCD 19"" (Panel only for TCO03)"

14 Reference Infomation

Maker	VENDOR P/N	PANEL_CODE	PANEL_ABB	STICKER_CODE	Remarks
SEC	LTA460H1-L01	BN07-00157A	E22		*creat panel code for AMLCD 46" TV "
SEC	LTM170EU-L11	BN07-00160A	E23		*creat new panel code for AMLCD 17" (Panel only for TC003)"
SEC	LTM240W1-L03	BN07-00134B	E24		"24" panel ZPD code derivation"
SEC	LTM190E4-L01	BN07-00145B	E25		"AMLCD 19" ZPD Panel code derivation"
SEC	LTM240W1-L03	BN07-00134B	E26		"24" panel ZPD code derivation"
SEC	LTM150XO-L01	BN07-00164A	E27		"AMLCD 15" XO-L01 new panel development"
SEC	LTM150XO-L01	BN07-00164B	E28		"AMLCD 15" XO-L01 ZPD code derivation"
SEC	LTM170EU-L11	BN07-00160B	E29		"AMLCD 17" NEW panel code derivation"
SEC	LTA320W2-L01	BN07-00172A	SPZ		AMLCD 32" NEW panel
SEC	LTM213U4-L01	BN07-00124B	SPZ		21.3" Narrow PANEL ZPD Panel derivation
SEC	LTM170EU-L11	BN07-00189A	STH		AMLCD EU-L11 Pb free panel code derivation
SEC	LTM170EU-L11	BN07-00189B	STZ		AMLCD EU-L11 Pb free panel ZPD code derivation
SEC	LTM240W1-L04	BN07-00188A	SPH		24" A-DCC new panel development
SEC	LTM240W1-L04	BN07-00188B	SPZ		24" A-DCC panel ZPD code derivation
SEC	LTM190EX-L01	BN07-00191A	STH		AMLCD 19" TN new Panel
SEC	LTM190EX-L02	BN07-00191B	STZ		AMLCD 19" TN new Panel ZPD derivation
SEC	LTA230W1-L02	BN07-00184A	SPZ		AMLCD 23" 16:9 new Panel
SEC	LTA260W2-L01	BN07-00185A	SPZ		AMLCD 26" 16:9 new Panel
SEC	LTM240M1-L01	BN07-00195A	SPH		24" panel with high brightness development
SEC	LTA400W2-L01	BN07-00186A	SPZ		AMLCD 40" 16:9 new Panel
SEC	LTM150XO-L01	BN07-00197A	STH		AMLCD 15" XO-L01 Pb free panel code
SEC	LTM150XO-L01	BN07-00197B	STZ		AMLCD 15" XO-L01 Pb free panel ZPD code
SEC	LTM170EU-L21	BN07-00202A	STZ		AMLCD EU-L21 ZPD new code derivation
SEC	LTA460W2-L03	BN07-00187A	SPZ		BEETOVEN 46" ZPD new panel
SEC	LTM240M1-L01	BN07-00195B	SPZ		24" igh brightness panel ZPD code derivation
SEC	M170EX-L21	BN07-00206A	STZ		AMLCD LTM170EX-L21 ZPD new code derivation
SEC	LTA460H3-L01	BN07-00200A	SPZ		AMLCD 46" LED BLU panel
SEC	LTM170EU-L15	BN07-00214A	STZ		AMLCD EU-L15 7V high brightness ZPD new code derivation
SEC	LTM170E8-L21	BN07-00218A	SPZ		AMLCD LTM170E8-L21 PVA ZPD new code derivation
SEC	LTM190EX-L21	BN07-00222A	STZ		*DISPLAY LCD
SEC	LTM201U1-L01	BN07-00190B	SPZ		AMLCD 20.1" Normal panel ZPD code derivation
SEC	LTM190E4-L21	BN07-00223A	SPZ		HAYDN 17" PZD code PANEL derivation
SEC	LTA570H1-L01	BN07-00196A	SPZ		AMLCD 57" new panel development
SEC	LTM150XO-L21	BN07-00229A	STZ		AMLCD 15" XO-L21 8ms panel code
SEC	LTA260W2-L11	BN07-00239A	SPZ		AMLCD 26" 16:9 7Line new Panel
SEC	LTA400WS-LH1	BN07-00245A	SPZ		AMLCD 40" 16:9 SPVA 90% new Panel
SEC	LTM213U6-L01	BN07-00231A	SPZ		AMLCD 21.3" PVA new Panel Code
SEC	LTA320WS-LH2	BN07-00244A	SPZ		AMLCD 32" 16:9 SPVA 90% new Panel
SEC	LTA400WS-LH1	BN07-00245A	SPZ		AMLCD 40" 16:9 SPVA 90% new Panel
CPT	CLAA150XG09	BN07-00141A	PA		"CPT 15" Monitor new panel development"
CPT	CLAA170EA02	BN07-00148A	PB		"17" CPT NEW development panel"
CPT	CLAA170EA02	BN07-00148B	PC		"17" CPT ZPD panel code derivation"
CPT	CLAA150XG09	BN07-00141B	PTZ		"CPT 15" panel ZPD code derivation (GOYA-PJT)"
CPT	CLAA150XP01	BN07-00173A	PTH		CPT 15" PSWG code derivation
CPT	CLAA150XP01	BN07-00173B	PTZ		CPT 15" PSWG panel ZPD code
CPT	CLAA170EA07	BN07-00174A	PTH		"CPT 17" PSWG panel code derivation
CPT	CLAA170EA07	BN07-00174B	PTZ		CPT 17" PSWG type new Panel code"
CPT	CLAA170EA07	BN07-00174B	PTZ		CPT 17" PSWG type new Panel code
CPT	CLAA170EA07Q	BN07-00220A	PTZ		CPT 17" PSWG R/T 8msec code derivation
CPT	CLAA170EA07Q	BN07-00220B	PTH		CPT 17" PSWG R/T 8msec HPD code derivation
CPT	CLAA150XP01F	BN07-00236A	PTZ		CPT 15" PSWG panel ZPD & Lead free code derivation
TOSHIBA	LTM15C419(A)	BN07-00002A	TA		-
TOSHIBA	LTM15C423(B)	BN07-00006A	TB		-
TOSHIBA	LTM18C161	BN07-00008A	TC		-
TOSHIBA	LTM15C443	BN07-00031A	TD		-
TOSHIBA	LTM15C458	BN07-00043A	TE		-
TOSHIBA	LTM15C458S	BN07-00077A	TF		"TSB 15" high brightness Panel"
TOSHIBA	LTM15C458	BN07-00078A	TG		Toshiba ZPD panel
TOSHIBA	LTM15C498S	BN07-00099A	TH		TSB LTM15C458S (ZPD)
HANNSTAR	HSD150MX41A(A)	BN07-00020A	NA		"TTL type"
HANNSTAR	HSD150MX12	BN07-00030A	NB		"TTL type"
HANNSTAR	HSD170ME13	BN07-00180A	NTH		Hannstar 17" TN new panel development
HANNSTAR	HSD170ME13	BN07-00180B	NTZ		Hannstar 17" TN new panel development ZPD code derivation
HANNSTAR	HSD190ME12	BN07-00210A	NTZ		Hannstar 19" TN new panel development
HANNSTAR	HSD150MX17-A	BN07-00226A	NTZ		Hannstar 15" slim panel ZPD code derivation
TORISAN	TM150XG-22L03(A)	BN07-00021A	RA		-
TORISAN	TM150XG-26L06	BN07-00042A	RB		-
TORISAN	TM181SX-76N01	BN07-00048A	RC		-
TORISAN	TM150XG-26L06	BN07-00059A	RD		15" XGA TN MODE(ZPD)
TORISAN	TM290WX-71N31	BN07-00063A	RE		"RS24NS (TORISAN 29" NEW PANEL)"
TORISAN	TM396WX-71N31	BN07-00064A	RF		"RS24NS (TORISAN 40" NEW PANEL)"
TORISAN	TM150XG-26L09	BN07-00073A	RG		"Panel for 15" TV"
TORISAN	TM150XG-26L10	BN07-00089A	RH		"L10(change except D/C) ZPD"
TORISAN	TM150XG-26L10	BN07-00090A	RJ		L10 NORMAL
TORISAN	TM190SX-70N01	BN07-00098A	RK		Torisan 19" Panel
TORISAN	TM181SX-76N01	BN07-00106A	RL		ZPD Panel code
TORISAN	TM190SX-70N01	BN07-00107A	RM		ZPD Panel code

Maker	VENDOR P/N	PANEL_CODE	PANEL_ABB	STICKER_CODE	Remarks
TORISAN	TM290WX-71N31	BN07-00115A	RN		"Color Coordinates change panel for TORISAN 29" TV"
TORISAN	TM396WX-71N31	BN07-00116A	RP.Q		"Color Coordinates change panel for TORISAN 40" TV"
TORISAN	TM220WX-71N31	BN07-00125A	RR		"Development TORISAN 22" TV PANEL (ZPD)"
TORISAN	TM220WX-71N31	BN07-00127A	RS		"Development TORISAN 22" TV PANEL (HPD)"
TORISAN	TM396WX-71N32A	BN07-00150A	RT		120V inverter Exclusive panel
TORISAN	TM190SX-70N02	BN07-00154A	RMH		Torisan 6bit panel code Derivation
TORISAN	TM190SX-70N02	BN07-00154B	RMZ		Torisan 6bit panel code Derivation
TORISAN	TM150XG-A01	BN07-00162A	RTH		Torisan 15" Narrow & Slim panel development
TORISAN	TM150XG-A01	BN07-00162B	RTZ		Torisan 15" N&S panel ZPD code Derivation
SHARP	LQ181E1DG11(A)	BN07-10001C	PA		-
SHARP	LQ150X1LW71	BN07-00067A	PB		SHARP 15" PVA PANEL
SHARP	LQ370T3LZ41	BN07-00216A	FAZ		Rome2
HITACHI	TX38D12VC0CAA(A)	BN07-00003A	HA		-
HITACHI	TX43D1VC0CAB	BN07-00060A	HB		17" SXGA PVA MODE
HITACHI	TX43D15VC0CAB	BN07-00101A	HC		ZPD Panel
HITACHI	TX51D11VC0CAB	BN07-00122A	HD		20.1" NARROW
HITACHI	TX54D11VC0CAB	BN07-00123A	HE		21.3" NARROW
HITACHI	TX80D12VC0CAB	BN07-00169A	HIZ		"Development new panel for Hitachi 32" TV (ZPD)"
HITACHI	TX54D11VC0CAB	BN07-00123B	HIZ		Hitachi 21.3" ZPD panel
IBM	ITSX94S	BN07-00017A	IA		-
UNIPAC	UM170E0	BN07-00028A	UA		Loaded by cisdba
HYUNDAI	HT15X13	BN07-00035A	DA		-
HYUNDAI	HT17E11-200	BN07-00049A	DB		TN MODE
HYUNDAI	HT17E11-300	BN07-00093A	DC		HT17E11-300 ZPD panel
HYUNDAI	HT17E11-400	BN07-00094A	DD		HT17E11-400 normal panel
HYUNDAI	HT17E11-400	BN07-00095A	DE		HT17E11-400 ZPD panel code
HYUNDAI	HT17E12	BN07-00096A	DF		HT17E12 (Narrow & slim design)
HYUNDAI	HT17E12	BN07-00105A	DG		ZPD Panel code
HYUNDAI	HT15X15-D00	BN07-00146A	DH		"Development for Ares 15" Hydix TV"
HYUNDAI	HT15X15-D01	BN07-00146B	DJ		"Derivation panel HPD for Ares 15" Hydix TV"
HYUNDAI	HT17E13-100	BN07-00167A	DTH		"PINEHURST-2(BM) PJT 17" HYDIS PANEL Derivation"
HYUNDAI	HT17E13-100	BN07-00167B	DTZ		"PINEHURST-2(BM) Hydix 17" ZPD code Derivation"
ACER	L170E3	BN07-00044A	AA		TN(ADT)
ACER	M170EN05	BN07-00076A	AB		AU 17" Panel (Narrow & slim design)
ACER	M170EN05	BN07-00102A	AC		ZPD Panel code
ACER	M190EN02	BN07-00170A	AMH		"AU Monitor 19" new panel development (P19-1S)"
ACER	M190EN02	BN07-00170B	AMZ		"AU 19" ZPD code derivation (ZPD)"
ACER	M170EN06	BN07-00171A	ATH		"AU Monitor 17" New panel development "
ACER	T260XW01	BN07-00163A	AMZ		"AU 26" new panel development (NF26E0)"
ACER	A201SN01	BN07-00177A	ATZ		"AU TV panel 20.1" TN SVGA new panel development"
ACER	M170EN06	BN07-00171B	ATZ		AU Monitor 17" ZPD code derivation
ACER	T315XW01	BN07-00194A	AMZ		AU 32" new
ACER	M170EG01	BN07-00192A	ATH		AU TN PSWG type new Panel code
ACER	M170EG01	BN07-00192B	ATZ		AU TN PSWG type NEW panel code derivation
ACER	M190EN04	BN07-00203A	ATH		AU Monitor 19" ZPD new Panel code
ACER	T260XW02	BN07-00208A	AMZ		AUO 26" ZPD panel
ACER	M170EG01 V8	BN07-00221A	ATZ		AU TN PSWG type new Panel (8mssec) ZPD code derivation
ACER	T260XW02	BN07-00233A	AMZ		AUO 26" Panel new (Cosmetic spec down grade)
ACER	T315XW01	BN07-00234A	AMZ		AUO 32" Grade new (Cosmetic spec down grade)
ACER	M190EN03	BN07-00224A	AMZ		AU Monitor 19" MVA new code derivation
ACER	T315XW01	BN07-00237A	AMZ		LCD TV VE project new
ACER	T315XW01	BN07-00238A	AMZ		LCD TV VE project new
ACER	M201UN02 V3	BN07-00168A	AMZ		
CHIMEI	M170E3-L01	BN07-00050A	CA		TN PANEL
CHIMEI	M150X3-L01	BN07-00051A	CB		COMPATIBLE
CHIMEI	M170E4-L01	BN07-00052A	CC		MVA PANEL
CHIMEI	M150X2-L01	BN07-00066A	CD		CHIMEI 15" PVA PANEL
CHIMEI	M150X3-L01	BN07-00079A	CE		Chimei ZPD panel
CHIMEI	M170E3-L01	BN07-00103A	CF		ZPD Panel code
CHIMEI	M170E4-L01	BN07-00104A	CG		ZPD Panel code
CHIMEI	V296W1-L01	BN07-00120A	CH		MVA
CHIMEI	M170E6-L02	BN07-00126A	CJ		HIGHLAND 17" LOW PANEL
CHIMEI	M190E2-L01	BN07-00131A	CK		GH19AS,BS CHIMEI PANEL
CHIMEI	M150X4-L06	BN07-00137A	CL		15" Narrow & Slim panel
CHIMEI	M170E6-L01	BN07-00133A	CM		"2003-03-11 vendor change"
CHIMEI	M170E6-L01	BN07-00133B	CN		ZPD derivation panel
CHIMEI	V201V1-T01	BN07-00135A	CP		CHIMEI 20.1" panel development
CHIMEI	M170E6-L02	BN07-00126B	CQ		"HIGHLAND 17" LOW PANEL ZPD derivation panel"
CHIMEI	M170E6-L05	BN07-00152A	CR		"CMO 17" new panel development code"
CHIMEI	M170E6-L05	BN07-00152B	CS		"CMO 17" ZPD panel code derivation"
CHIMEI	M150X4-L06	BN07-00137B	CT		Chimei 15" Narrow & Slim panel ZPD derivation
CHIMEI	M170E5-L05	BN07-00165A	CTH		CMO 17" new panel development code (GOYA2-PJT)
CHIMEI	M170E5-L05	BN07-00165B	CTZ		CMO 17" ZPD panel(GOYA2-PJT)
CHIMEI	V230W1-L02	BN07-00209A	CMZ		CMO 23" development
CHIMEI	V320B1-L01	BN07-00207A	CMZ		CMO 32" development
CHIMEI	V270W1-L01	BN07-00136A	CMZ		CHI MEI 27" panel development
NEC	SVA150XG04TB	BN07-00225A	BTZ		SVA NEC 15" panel ZPD code

Memo

<http://www.wjel.net>

2 Product Specifications

2-1 Fashion Feature

- Magic Rotation application(Auto pivot Delete)
- Embedded Power, Mechanical S/W application

2-2 Feature

No	Feature	Feature	Operating method
1	Auto Auto	If Monitor turns on in some resolution for the first time, it can execute Auto adjustment automatically for the high Quality	
2	Auto Power on/off	Monitor can check the change of Source Automatically and change the source to the active Input	
3	Wall mount	Monitor supports Wall mount (100 X 100)	
4	Gamma & Color temperature Adjust	Monitor supports 3 step Adjustment for Gamma & Color temperature	
5	Magic Bright	Monitor supports 7 different brightness mode (Custom, Text, Internet, Game, Sports, Movie, Dynamic Contrast)	
6	Sharpness	Adjust the Sharpness	

2-3 LME20WS Specifications

Item	Description
LCD Panel	TFT-LCD panel, RGB vertical stripe, normally black transmissive, 20-Inch viewable, 0.258 (H) x 0.258 (V) mm pixel pitch
Scanning Frequency	Horizontal : 30 kHz ~ 81 kHz (Automatic) Vertical : 56 Hz ~ 75 Hz (WSXGA+ : 60Hz)
Display Colors	16.7 Million colors
Maximum Resolution	Horizontal : 1680 Pixels Vertical : 1050 Pixels
Input Signal	Analog / Digital
Input Sync Signal	Seperate H/V sync, Composite H/V, Sync-on-Green, Automatic synchroniza tion whitout external swith of sync type Level : TTL level
Maximum Pixel Clock rate	162 MHz (Analog/Display)
Active Display Horizontal/Vertical	408(H) x 306(W)
AC power voltage & Frequency	AC 90 ~ 264 Volts, 60/50 Hz ± 3 Hz
Power Consumption	50W (MAX)
Dimensions	
Set (W x D x H)	476 x 65.2 x 329 mm (18.7 x 2.6 x 13 inch)
With Stand (W x D x H)	476 x 219.3 x 397 mm (18.5 x 8.6 x 15.6 inch)
SWIVEL ANGLE	0 ~ 350°
TILT ANGLE	-1 ~ 22°
Weight (Set/Package)	6.0 Kg / 7.9 Kg
Environmental Considerations	Operating Temperature : 50° F ~ 122° F (10° C ~ 50° C) Operating Humidity : 10% ~ 90% Storage temperature : -4° F ~ 113 ° F (-20° C ~ 45° C) Storage Humidity : 5% ~ 90%
- Designs and specifications are subject to change without prior notice.	

2-4 LME22WS Specifications

Item	Description
LCD Panel	TFT-LCD panel, RGB vertical stripe, normally black transmissive, 22-Inch viewable, 0.258 (H) x 0.258 (V) mm pixel pitch
Scanning Frequency	Horizontal : 31 kHz ~ 80 kHz (Automatic) Vertical : 56 Hz ~ 75 Hz (WSXGA+ : 60Hz)
Display Colors	16.7 Million colors
Maximum Resolution	Horizontal : 1680 Pixels Vertical : 1050 Pixels
Input Signal	Analog / Digital
Input Sync Signal	Seperate H/V sync, Composite H/V, Sync-on-Green, Automatic synchroniza tion whitout external swith of sync type Level : TTL level
Maximum Pixel Clock rate	162 MHz (Analog/Display)
Active Display Horizontal/Vertical	408(H) x 306(W)
AC power voltage & Frequency	AC 90 ~ 264 Volts, 60/50 Hz ± 3 Hz
Power Consumption	50W (MAX)
Dimensions	
Set (W x D x H)	514.6 x 63 x 353 mm (20.3 x 2.5 x 19 inch)
With Stand (W x D x H)	514.6 x 219.3 x 421.7 mm (20.3 x 8.6 x 16.6 inch)
SWIVEL ANGLE	0 ~ 350°
TILT ANGLE	-1 ~ 22°
Weight (Set/Package)	6.5 Kg / 8.5 Kg
Environmental Considerations	Operating Temperature : 50° F ~ 122° F (10° C ~ 50° C) Operating Humidity : 10% ~ 90% Storage temperature : -4° F ~ 113 ° F (-20° C ~ 45° C) Storage Humidity : 5% ~ 90%
- Designs and specifications are subject to change without prior notice.	

2-5 LME20AS Specifications

Item	Description
LCD Panel	TFT-LCD panel, RGB vertical stripe, normally black transmissive, 20-Inch viewable, 0.258 (H) x 0.258 (V) mm pixel pitch
Scanning Frequency	Horizontal : 30 kHz ~ 81 kHz (Automatic) Vertical : 56 Hz ~ 75 Hz (WSXGA+ : 60Hz)
Display Colors	16.7 Million colors
Maximum Resolution	Horizontal : 1680 Pixels Vertical : 1050 Pixels
Input Signal	Analog
Input Sync Signal	RGB Analog 0.7 Vp-p \pm 5%, TTL level (V high \geq 2.0V, V low \leq 0.8V)
Maximum Pixel Clock rate	146 MHz (Analog)
Active Display Horizontal/Vertical	433.44 mm (H) x 270.9 mm (V)
AC power voltage & Frequency	AC 90 ~ 264 Volts, 60/50 Hz \pm 3 Hz
Power Consumption	Less than 55 W
Dimensions	
Set (W x D x H)	476 x 65.2 x 329 mm (18.7 x 2.6 x 13 inch)
With Stand (W x D x H)	476 x 219.3 x 397 mm (18.5 x 8.6 x 15.6 inch)
SWIVEL ANGLE	0 ~ 350°
TILT ANGLE	-1 ~ 22°
Weight (Set/Package)	6.0 Kg / 7.9 Kg
Environmental Considerations	Operating Temperature : 50° F ~ 122° F (10° C ~ 50° C) Operating Humidity : 10% ~ 90% Storage temperature : -4° F ~ 113° F (-20° C ~ 45° C) Storage Humidity : 5% ~ 90%
- Designs and specifications are subject to change without prior notice.	



2-6 LME22WS Specifications

Item	Description
LCD Panel	TFT-LCD panel, RGB vertical stripe, normally black transmissive, 22-Inch viewable, 0.258 (H) x 0.258 (V) mm pixel pitch
Scanning Frequency	Horizontal : 31 kHz ~ 80 kHz (Automatic) Vertical : 56 Hz ~ 75 Hz (WSXGA+ : 60Hz)
Display Colors	16.7 Million colors
Maximum Resolution	Horizontal : 1680 Pixels Vertical : 1050 Pixels
Input Signal	Analog / Digital
Input Sync Signal	Seperate H/V sync, Composite H/V, Sync-on-Green, Automatic synchroniza tion whitout external swith of sync type Level : TTL level
Maximum Pixel Clock rate	162 MHz (Analog/Display)
Active Display Horizontal/Vertical	408(H) x 306(W)
AC power voltage & Frequency	AC 90 ~ 264 Volts, 60/50 Hz ± 3 Hz
Power Consumption	50W (MAX)
Dimensions	
Set (W x D x H)	514.6 x 63 x 353 mm (20.3 x 2.5 x 19 inch)
With Stand (W x D x H)	514.6 x 219.3 x 421.7 mm (20.3 x 8.6 x 16.6 inch)
SWIVEL ANGLE	0 ~ 350°
TILT ANGLE	-1 ~ 22°
Weight (Set/Package)	6.5 Kg / 8.5 Kg
Environmental Considerations	Operating Temperature : 50° F ~ 122° F (10° C ~ 50° C) Operating Humidity : 10% ~ 90% Storage temperature : -4° F ~ 113 ° F (-20° C ~ 45° C) Storage Humidity : 5% ~ 90%
- Designs and specifications are subject to change without prior notice.	

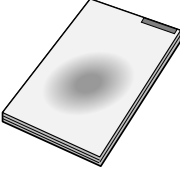
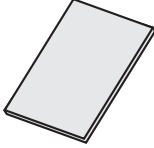
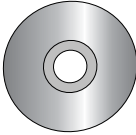


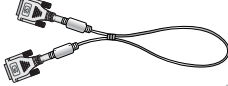
2-7 LME22VS Specifications

Item	Description
LCD Panel	TFT-LCD panel, RGB vertical stripe, normally black transmissive, 22-Inch viewable, 0.258 (H) x 0.258 (V) mm pixel pitch
Scanning Frequency	Horizontal : 31 kHz ~ 80 kHz (Automatic) Vertical : 56 Hz ~ 75 Hz (WSXGA+ : 60Hz)
Display Colors	16.7 Million colors
Maximum Resolution	Horizontal : 1680 Pixels Vertical : 1050 Pixels
Input Signal	Analog / Digital
Input Sync Signal	Seperate H/V sync, Composite H/V, Sync-on-Green, Automatic synchroniza tion whitout external swith of sync type Level : TTL level
Maximum Pixel Clock rate	162 MHz (Analog/Display)
Active Display Horizontal/Vertical	408(H) x 306(W)
AC power voltage & Frequency	AC 90 ~ 264 Volts, 60/50 Hz ± 3 Hz
Power Consumption	50W (MAX)
Dimensions	
Set (W x D x H)	514.6 x 63 x 353 mm (20.3 x 2.5 x 19 inch)
With Stand (W x D x H)	514.6 x 219.3 x 421.7 mm (20.3 x 8.6 x 16.6 inch)
SWIVEL ANGLE	0 ~ 350°
TILT ANGLE	-1 ~ 22°
Weight (Set/Package)	6.5 Kg / 8.5 Kg
Environmental Considerations	Operating Temperature : 50° F ~ 122° F (10° C ~ 50° C) Operating Humidity : 10% ~ 90% Storage temperature : -4° F ~ 113° F (-20° C ~ 45° C) Storage Humidity : 5% ~ 90%
- Designs and specifications are subject to change without prior notice.	

2-8 Spec Comparison

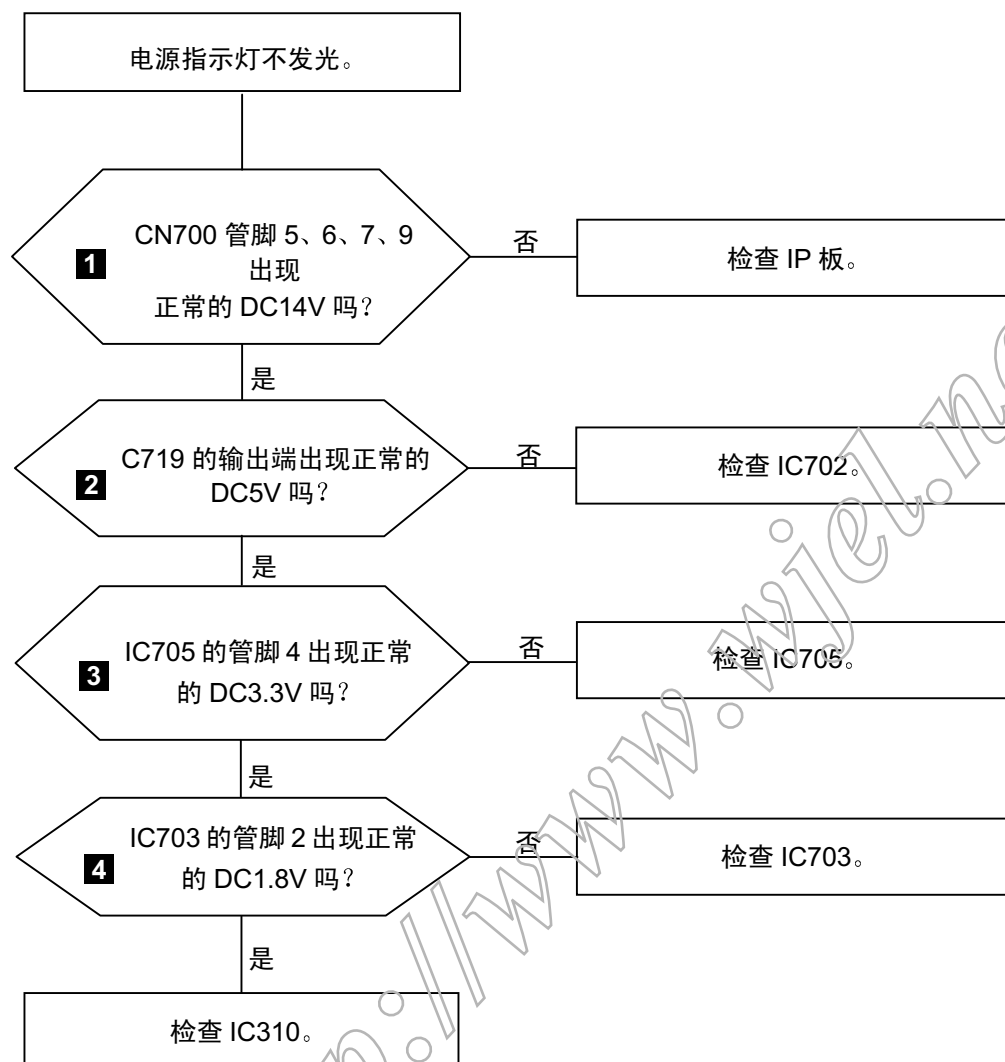
Model	LME20WS / LME20AS LME22WS / LME22VS	LS20BRD
Design		
Screen Size	20" (LME20WS) 22" (LME22WS)	20.1"
Brightness	300cd/m ²	300cd/m ²
Contrast	1000:1 (206BW) 700:1 (226BW)	800:1
Fast Response Time	8ms	5ms
Magic Pivot	X	X
Magic Tune	Premium	Premium
Sharpness	O	O
Magic Bright	7 steps Custom , Text, Internet, Game, Sports, Movie, Dynamic Contrast	6 steps Text, Internet, Sports, Movie, Game, Custom

2-9 Option Specification

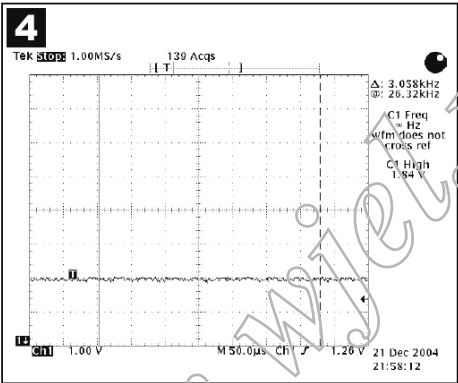
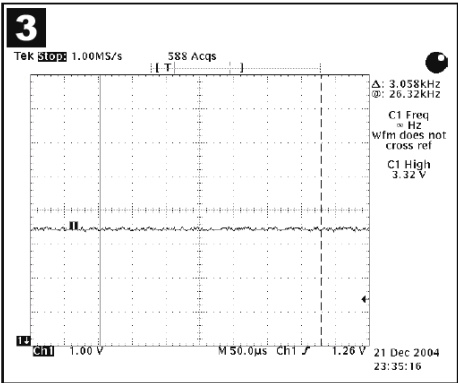
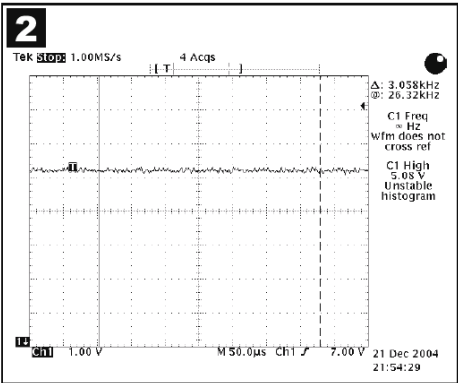
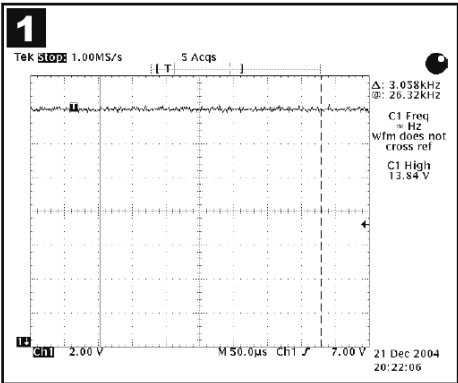
Item	Item Name	Code.No	Remark
	Quick Setup Guide	BH68-00376L	
	Warranty Card (Not available in all locations)	BH68-00261F	
	User's Guide, Monitor Driver, MagicTune™ software	LME20WS/LME22WS: BN59-00521H LME20AS: BN59-00521M LME21AS: BN59-00521V LME22VS: BN59-00521T	
	D-Sub(15 Pin) Cable	BN39-00244B	
	Power Cord	3903-000085	
	DVI Cable	BN39-00246F	Sold separately

4 故障排除

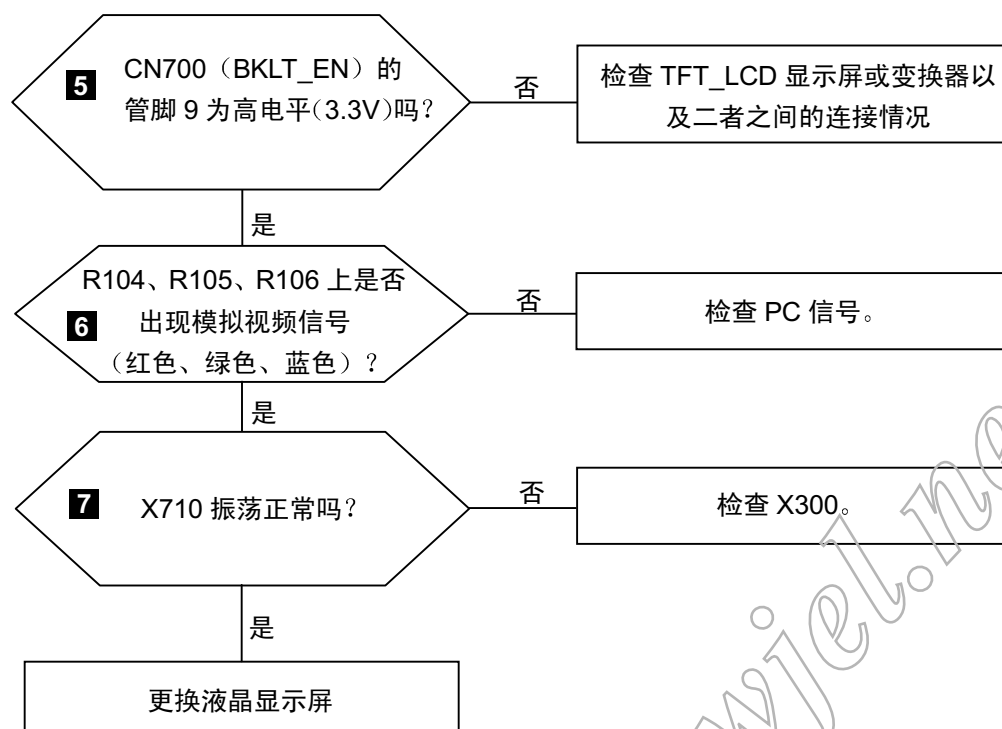
4-1 未通电



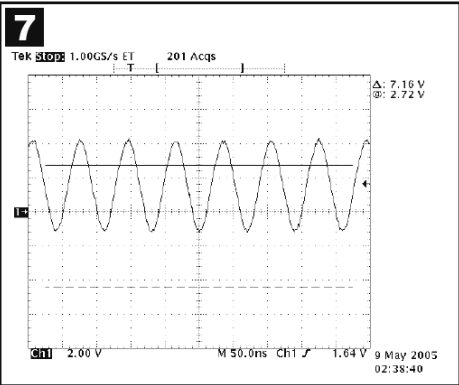
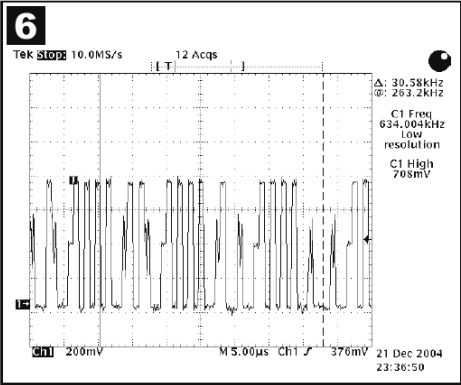
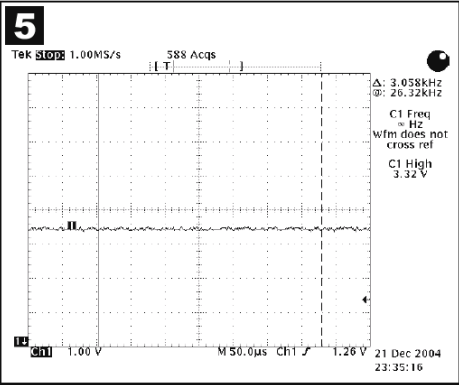
波形



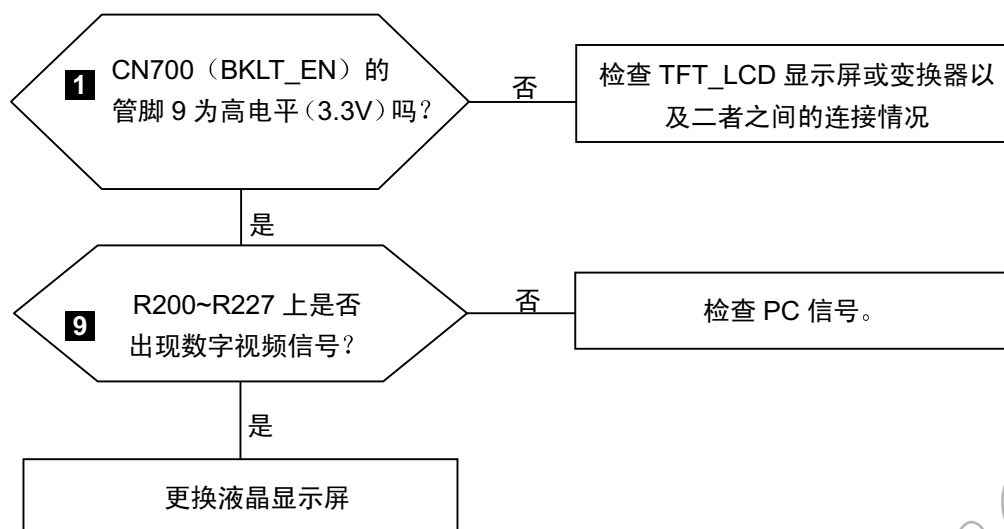
4-2 没有图像（PC 模拟信号）



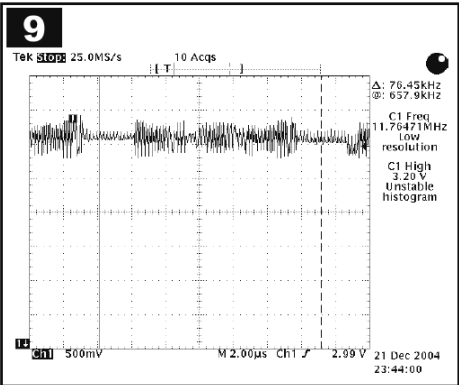
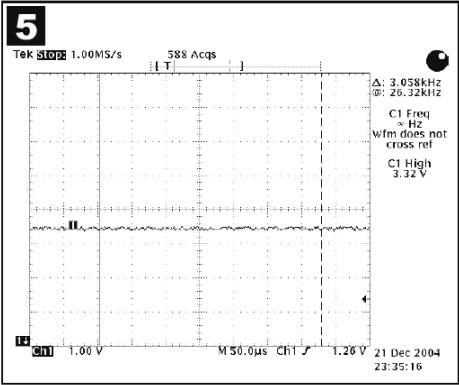
波形

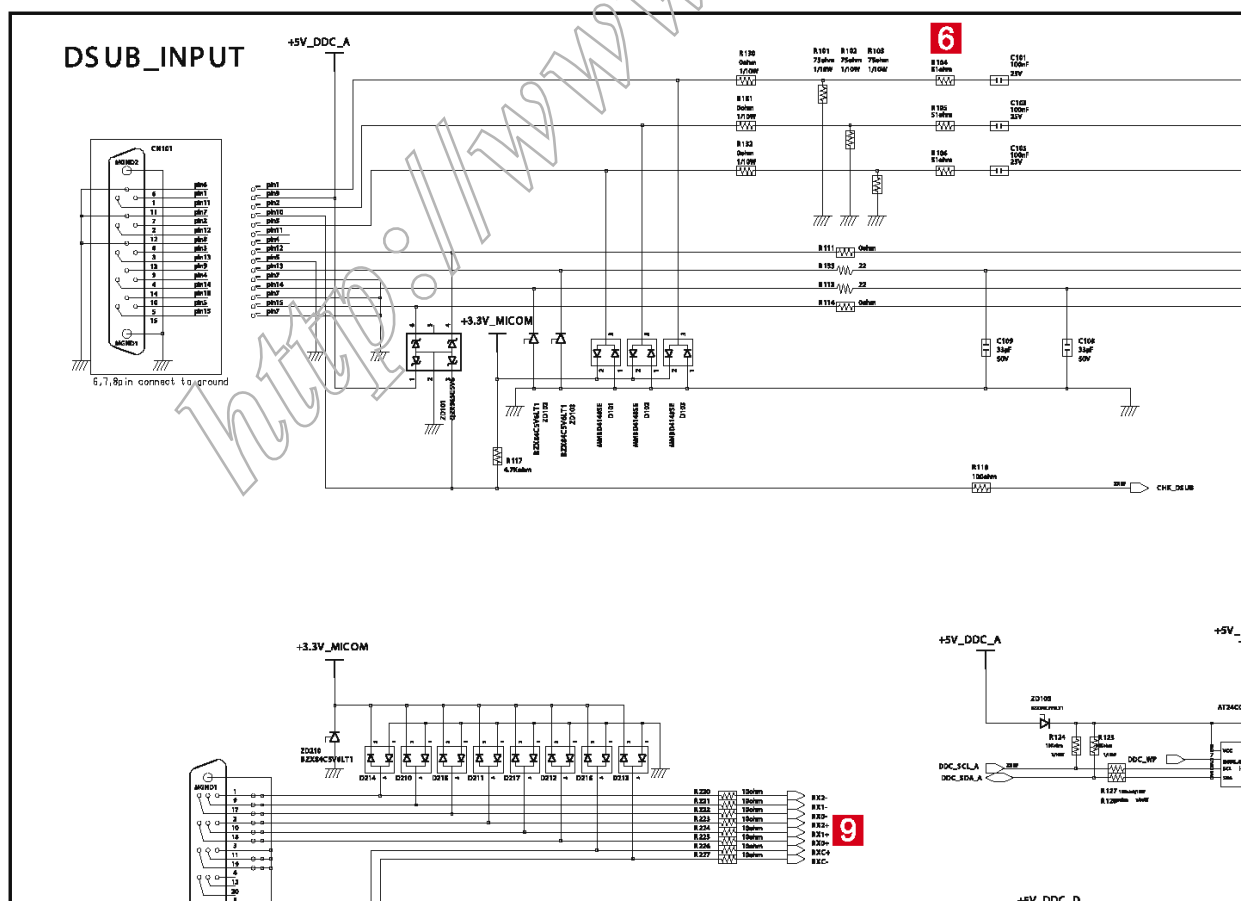
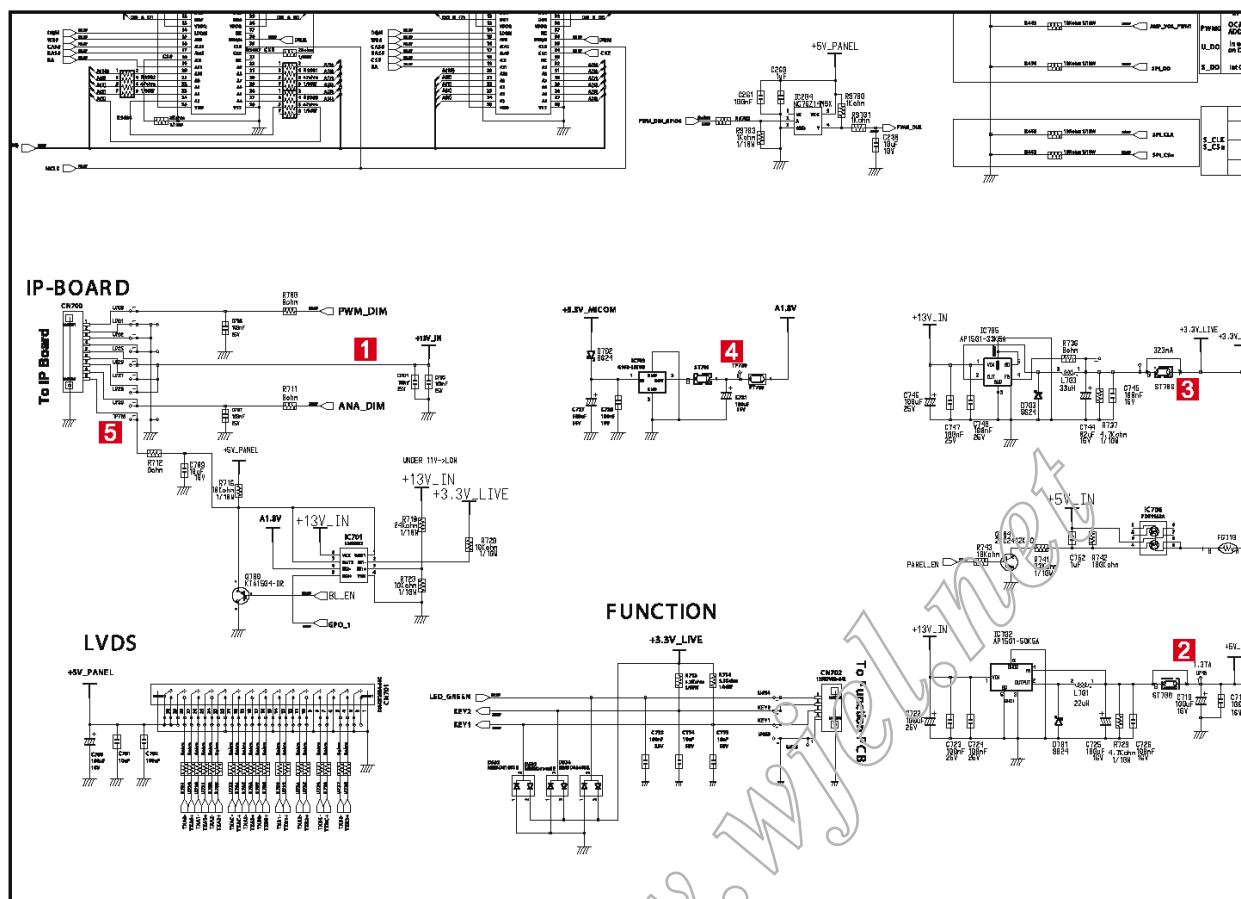


4-3 没有图像（PC 数字信号）

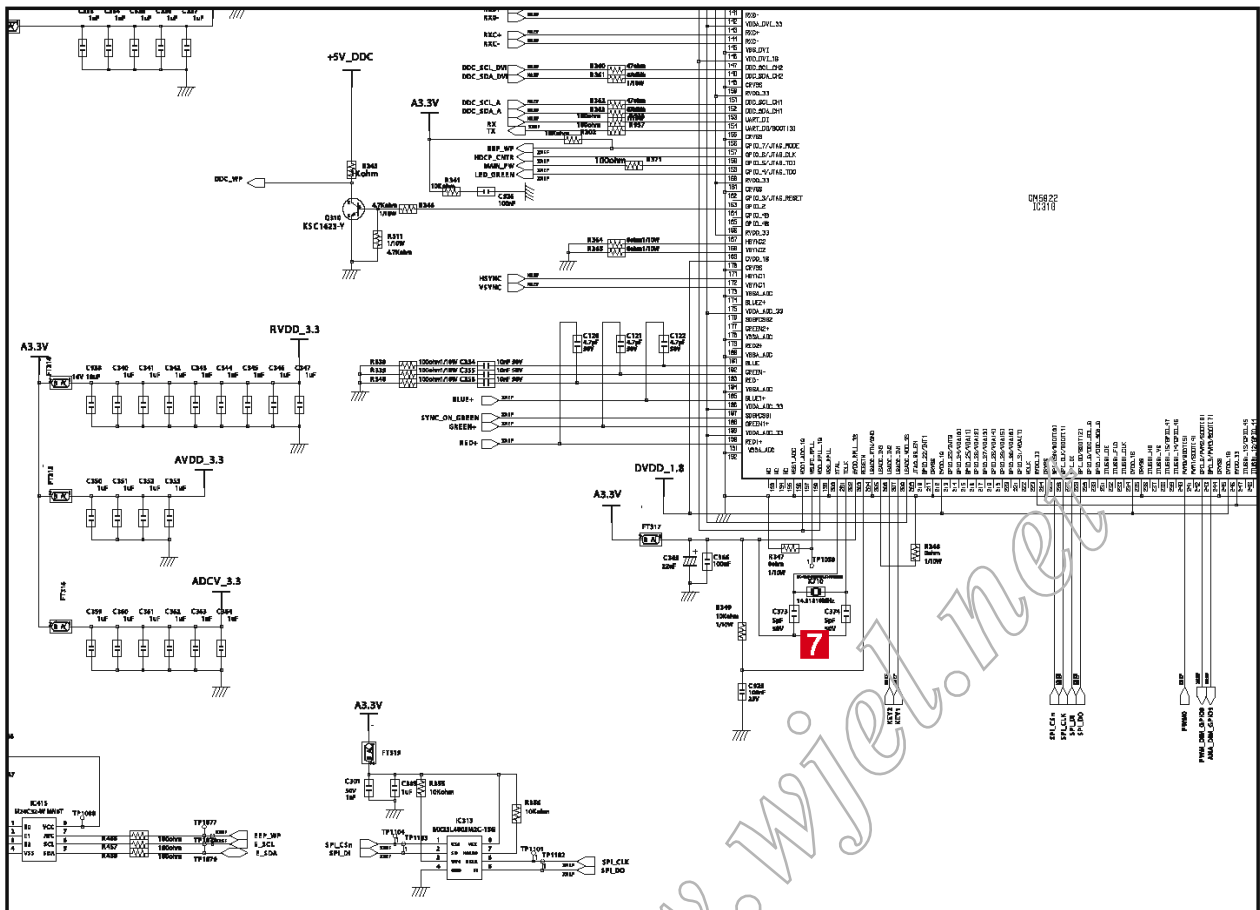


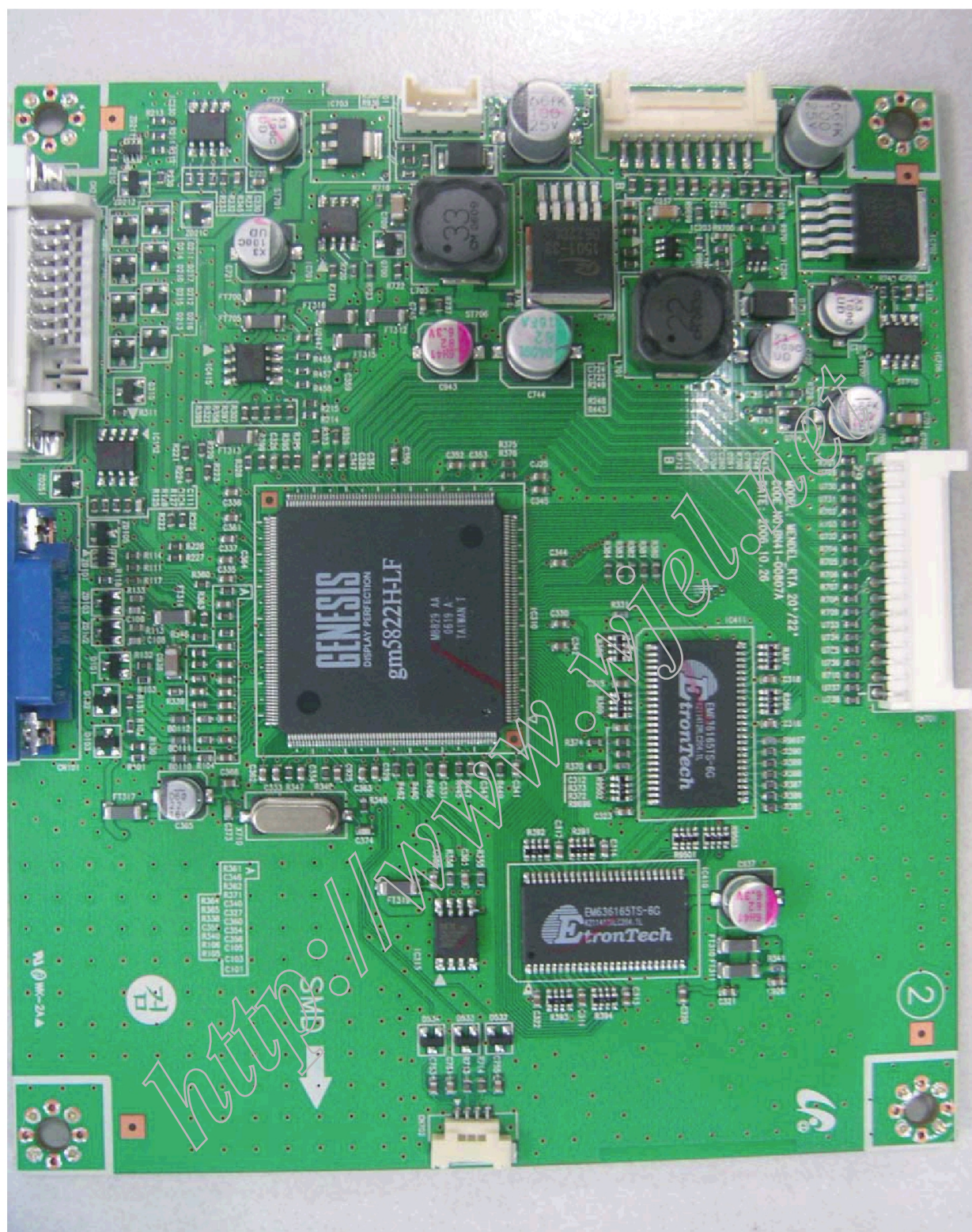
波形





4 故障排除





备忘录

<http://www.wjel.net>

10 操作说明和安装

10-1 正面



1. 菜单按钮

打开 OSD 菜单。还用于退出 OSD 菜单或返回以前的菜单。

2. 魔幻亮度按钮

魔幻亮度是依据正在观看的图片内容提供最佳观看环境的新功能。当前有六个不同的模式：定制、文本、互联网、游戏、体育运动和电影。各模式有自己的预先录制的亮度值。只需按下魔幻亮度控制按钮，即可轻松选择六个设置之一。

1) 定制

尽管本公司的工程师仔细选择数值，但是预设值可能让您的眼睛不舒适，取决于您的偏好。如果出现这种情况，使用 OSD 菜单调节亮度和对比度。

2) 文本

适用于涉及大量文字的文档或作品。

3) 互联网

适用于文字和图形等组合图像。

4) 游戏

适用于观看游戏等动画。

5) 体育运动

适用于观看体育运动等动画。

6) 电影：高亮度

适用于观看 DVD 或 VCD 等动画。

7) 动态对比度

动态对比度自动检测输入视频信号的分配情况，并调节到最佳对比度。

3. 亮度按钮

当屏幕上没有 OSD 时，按下该按钮调节亮度。

2.3. 调节按钮

调节菜单中的项目。

4. 确定按钮/来源按钮

启用反白显示的菜单项。

按下“来源”，然后在关闭屏幕时选择视频信号。

（当按下来源按钮，以改变输入模式时，屏幕中央显示当前模式信息—模拟或数字输入信号。）

注意：如果选择数字模式，必须使用 DVI 接线将显示器接到图形卡端口上。

5. 自动按钮

当“自动”按钮被按下时，自动调节屏幕出现在你的显示器中央。自动调节允许显示器自身调节所收到的视频信号。好的效果，粗略的状态都能够自动调节。（仅用于模拟模式）

6. 电源按钮

使用该按钮打开和关闭显示器

10-2 后部



1. 电源端口

将显示器的电源线接到显示器背面的电源端口上。

2. DVI 输入(HDCP)端口

将 DVI 接线接到显示器背面的 DVI 端口上。

3. RGB 输入端口

将信号线接到显示器背面的 15 针 D-sub 端口上。

4. Kensington 锁:

Kensington 锁是当在公共场所中使用时用于固定系统的装置。(该锁定装置必须单独购买。)

如欲获取有关使用 Kensington 锁的信息时，请与授权经销商联系。

10-3 使用座架

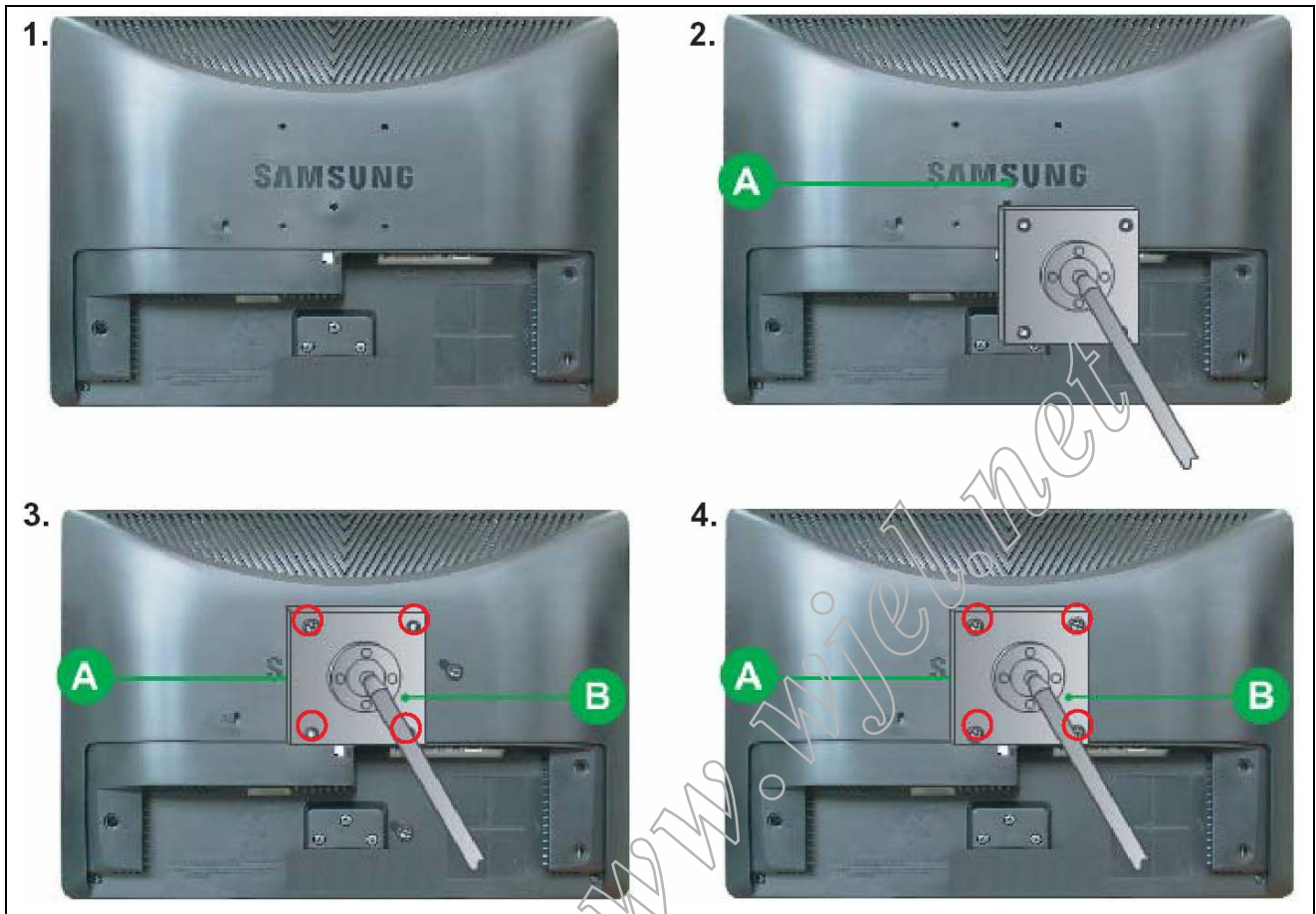
10-3-1 拆除底座



1. 关闭显示器，并拔下电源线。
2. 将液晶显示器面向下置于平坦的表面上，在液晶显示器下面铺上垫子，以保护屏幕。
3. 拆除四个螺钉，然后从液晶显示器拆除底座。

10-3-2 安装底座

- 本显示器采用 100mm x 100mm 符合 VESA 的安装接口板。



A. 显示器

B. 安装接口板

1. 关闭显示器，并拔下电源线。
2. 将液晶显示器面向下置于平坦的表面上，在液晶显示器下面铺上垫子，以保护屏幕。
3. 拆除四个螺钉，然后从液晶显示器拆除底座。
4. 将安装接口板与后盖安装板中的孔对准，并用随臂型底座、墙上安装的挂钩或其他底座提供的四个螺钉紧固。

11 拆卸和重新组装

维修手册的这一章叙述 LHA20WS 薄膜晶体管液晶显示器的拆卸和重新组装步骤。

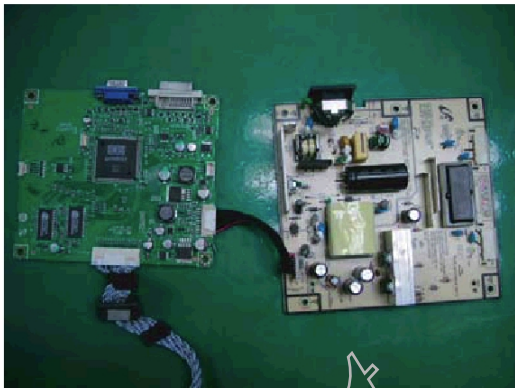
⚠ 警告：本显示器包含静电敏感器件。处理这些部件时应小心。

11-1 拆卸

- ⚠ 小心：1.在平坦的桌子上拆卸底座。
2.拆卸显示器前，请断开电源。

说明	图片说明
1. 从底座拆除 3 个螺钉并拆除底座。	
2. 从底座拆除 3 个螺钉，并提起后盖。	<div></div>

说明	图片说明
<p>3. 使用拆线工具拆除灯护罩。 (小心护罩。)</p> <p>4. 从印刷电路板组件拆除功能接线。</p>	
<p>5. 拆除显示屏灯接线。</p> <p>6. 从显示屏拆除 LVDS 接线。</p>	
<p>7. 拆除 4 个螺钉。</p>	
<p>8. 拆除 4 个螺钉，并提起主印刷电路板和 IB 板。</p>	

说明	图片说明
<p>9. 主印刷电路板和 IB 板。</p>	

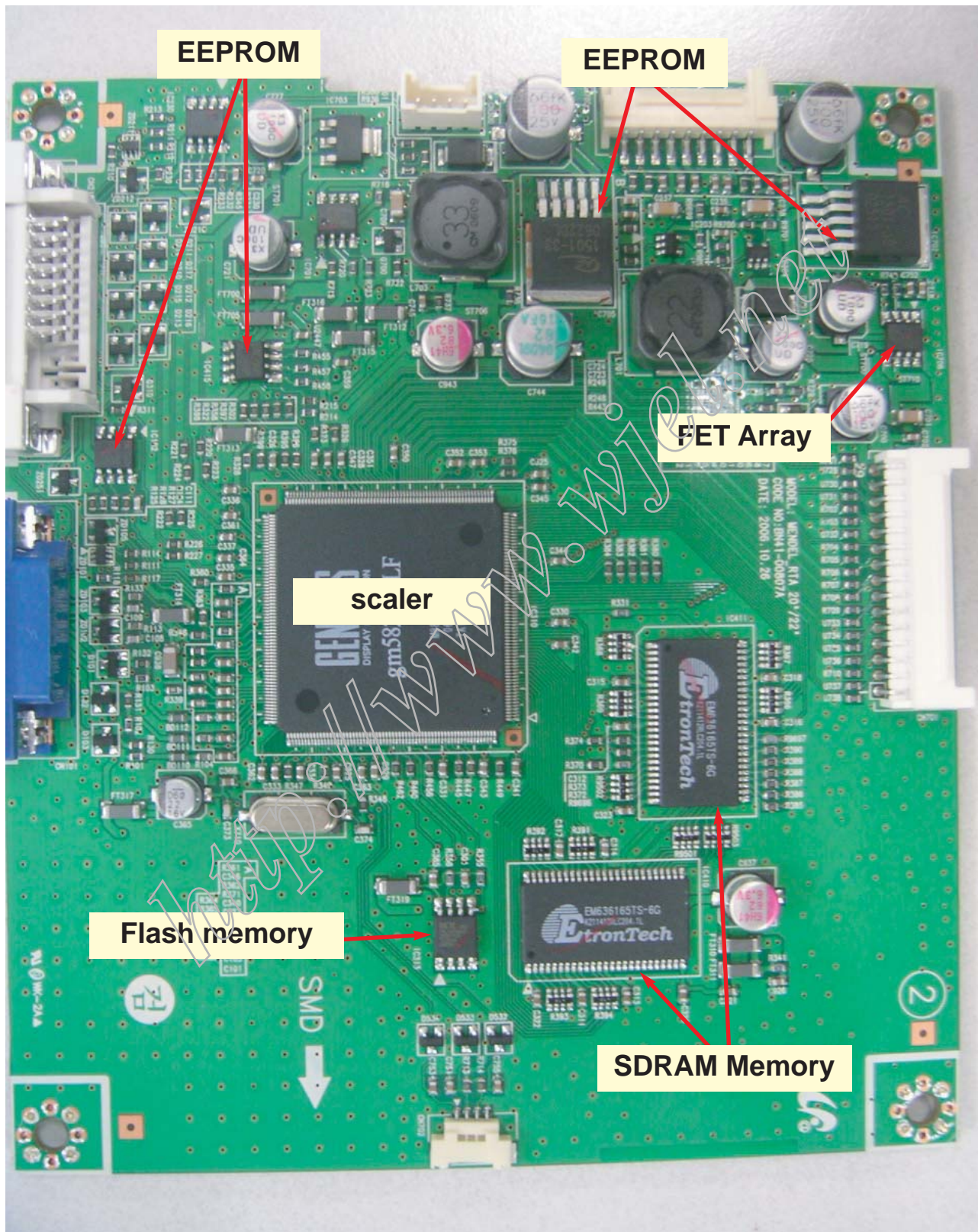
11-2 重新组装

重新组装步骤与拆卸步骤相反。

<http://www.wjel.net>

13 Circuit Descriptions

13-1 Block description



Memo

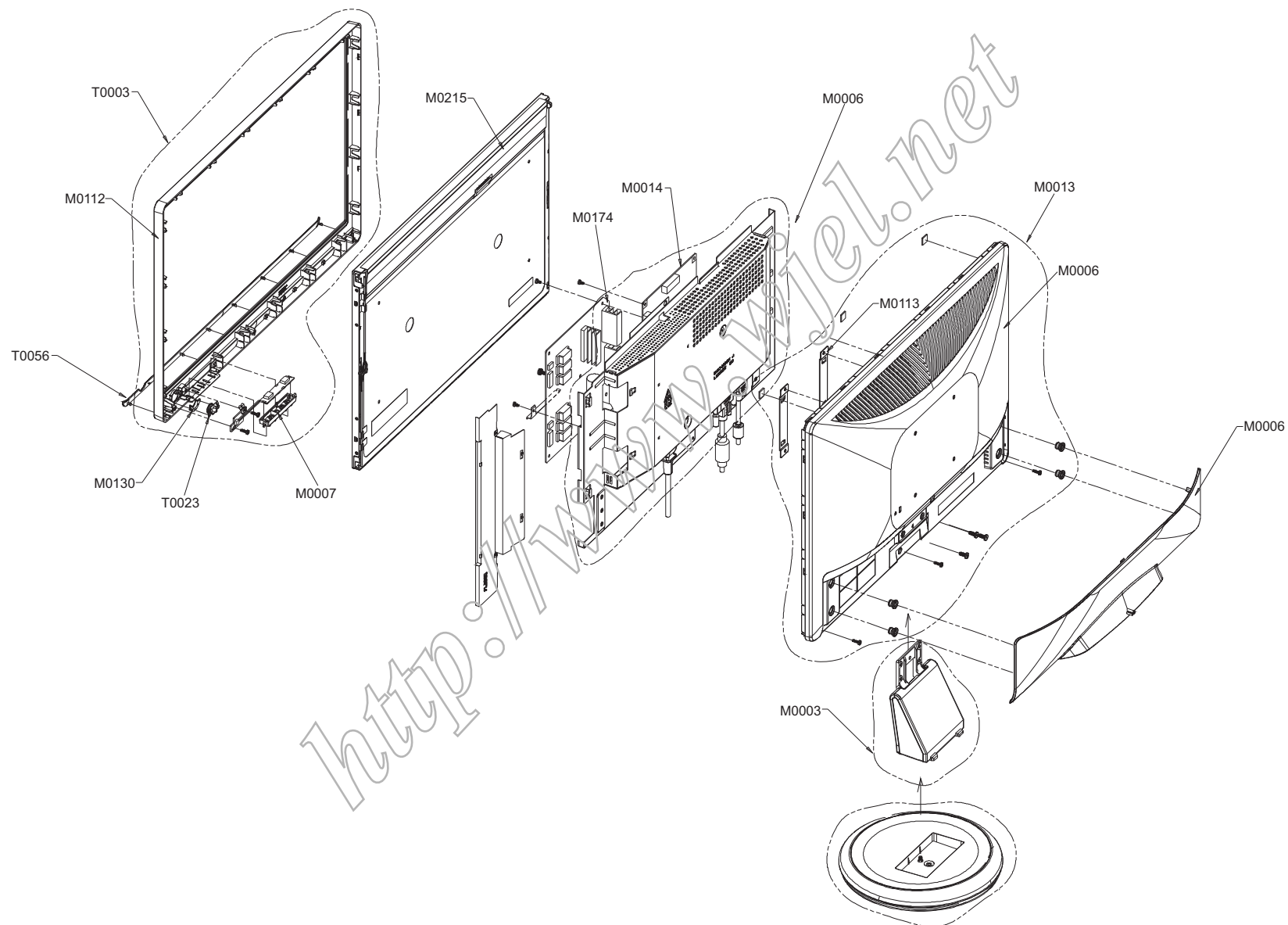
<http://www.wjel.net>

5 Exploded View and Parts List

-You can search for updated part codes through ITSELF web site.

URL : <http://itself.sec.samsung.co.kr>

5-1 LS22MEHSFV/XSF Exploded View



5-2 LS22MEHSFV/XSF Parts List

Location.No	CODE-NO	SPECIFICATION & DESCRIPTION	Q'TY	SA/SNA	REMARK
T0003	BN96-04543A	ASSY COVER P-FRONT;LS22MEW,ABS HB,BK26,H	1	S.A	
M0112	BN63-02914A	COVER-FRONT;LS22MEW,ABS,HB,BK26,HIGHGLOS	1	S.N.A	
T0056	BN63-02913A	COVER-DECORATION;LS22MEW,ABS,HB,GR70(SVM	1	S.N.A	
M0130	BN67-00168A	LENS LED;LS17ME/LS19ME,PC CLEAR,TP-15	1	S.N.A	
T0023	BN64-00473A	KNOB POWER;LS17ME/LS19ME,ABS,NTR	1	S.N.A	
M0007	BN64-00474A	KNOB-FUNCTION;LS17ME/LS19ME,ABS+PC,BK07	1	S.N.A	
M0215	BN07-00321A	LCD-PANEL;M220Z1-L01,Doppler,8bit,493.7*	1	S.A	
M0006	BN96-05498A	ASSY SHIELD P-COVER;MENDEL 21.6,SECC T1.	1	S.N.A	
M0174	BN44-00182B	IP BOARD;IP-43130A(BWVE),226BW,3.0 ~5.0m	1	S.A	
M0014	BN94-01445J	ASSY PCB MAIN-CTZ,W/W;LS22MEH*	1	S.N.A	
M0013	BN96-04544A	ASSY COVER P-REAR;LS22MEW,HIPS HB,BK07	1	S.A	
M0006	BN63-02915A	COVER-REAR;LS22MEW,HIPS,HB,BK07	1	S.N.A	
M0113	BN61-02806A	BRACKET-VESA;LS20MEW,SECC,T1.0	2	S.N.A	
M0006	BN63-02916A	COVER-REAR SUB;LS22MEW,HIPS,HB,BK07	1	S.A	
M0003	BN96-01953E	ASSY STAND P;LS19MDB,HIPS,BK07	1	S.A	

6 Electrical Parts List

-You can search for updated part codes through ITSELF web site.

URL : <http://itself.sec.samsung.co.kr/>

6-1 LS22MEHSFV/XSF Parts List

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
		LS22MEHSFV/XSF	226BW,WSF1/S22A1-LME,22,LCD-MQ,CHINA		
0.1	M0216	BN90-00886A	ASSY STAND;LS19ME	1	S.N.A
..2	M0003	BN96-01953E	ASSY STAND P;LS19MDB,HIPS,BK07	1	S.A
...3		BN63-01842E	COVER-STAND FRONT;LS19MDB,HIPS,HB,BK07	1	S.N.A
...3		BN63-01843E	COVER-STAND REAR;LS19MDB,HIPS,HB,BK07	1	S.N.A
...3	T0054	BN96-04161A	ASSY HINGE P;LS19WBP,SECC T2.0	1	S.N.A
...3	M0081	6003-000275	SCREW-TAPTITE;BH,+,-,B,M3,L10,ZPC(BLK),S	6	S.N.A
0.1	M0001	BN90-01131A	ASSY COVER FRONT;LS22MEWSFV/XAA	1	S.N.A
..2	T0003	BN96-04543A	ASSY COVER P-FRONT;LS22MEW,ABS HB,BK26,H	1	S.A
...3	M0081	6003-000275	SCREW-TAPTITE;BH,+,-,B,M3,L10,ZPC(BLK),S	2	S.N.A
...3	CCM1	BN63-02183D	COVER-SHEET;Rhcm,PE Vinyl,T0.05,680mm,20	0.5	S.N.A
...3	T0056	BN63-02913A	COVER-DECORATION;LS22MEW,ABS,HB,GR70(SVM	1	S.N.A
...3	M0112	BN63-02914A	COVER-FRONT;LS22MEW,ABS,HB,BK26,HIGHGLOS	1	S.N.A
...3	T0023	BN64-00473A	KNOB POWER;LS17ME/LS19ME,ABS,NTR	1	S.N.A
...3	M0007	BN64-00474A	KNOB-FUNCTION;LS17ME/LS19ME,ABS+PC,BK07	1	S.N.A
...3	M0130	BN67-00168A	LENS LED;LS17ME/LS19ME,PC CLEAR,TP-15	1	S.N.A
...3	M0145	BN96-03255C	ASSY BOARD P-FUNCTION;206BW,SJ06-01-003C	1	S.A
0.1	M0002	BN90-01132A	ASSY COVER REAR;LS22MEWSFV/XAA	1	S.N.A
..2	M0081	6003-000275	SCREW-TAPTITE;BH,+,-,B,M3,L10,ZPC(BLK),S	3	S.N.A
..2	M0081	6003-000337	SCREW-TAPTITE;BH,+,-,S,M4,L10,ZPC(BLK),SWR	3	S.A
..2	M0006	BN63-02916A	COVER-REAR SUB;LS22MEW,HIPS,HB,BK07	1	S.A
..2	M0013	BN96-04544A	ASSY COVER P-REAR;LS22MEW,HIPS HB,BK07	1	S.A
...3	M0113	BN61-02806A	BRACKET-VESA;LS20MEW,SECC,T1.0	2	S.N.A
...3	M0006	BN63-02915A	COVER-REAR;LS22MEW,HIPS,HB,BK07	1	S.N.A
...3	T0132	BN73-00049A	RUBBER FOOT;MO 15,17,19,CR,11*11,60,T1.5	3	S.N.A
...3		BN73-00089A	RUBBER-SET CAP;PO24FS,Elatomer SANTOPREN	4	S.N.A
0.1	M0107	BN91-01035N	ASSY LCD-CTZ;LS22DPWCSQ/EDC	1	S.N.A
..2	M0215	BN07-00321A	LCD-PANEL;M220Z1-L01,Doppler,8bit,493.7"	1	S.A
0.1	M0112	BN91-01595A	ASSY SHIELD;LS22MEV/SFV/EDC,21.6	1	S.N.A
..2		BN63-03430A	SHIELD-LAMP;LS22MEW,SPTT,T0.3	1	S.N.A
0.1	M0017	BN91-01715L	ASSY CHASSIS-CTZ,W/W;LS22MEH*	1	S.A
..2	M0081	6003-000115	SCREW-TAPTITE;BH,+,-,B,M3,L6,ZPC(BLK),SWRC	2	S.A
..2	M0081	6003-000115	SCREW-TAPTITE;BH,+,-,B,M3,L6,ZPC(BLK),SWRC	1	S.A
..2	M0081	6003-001439	SCREW-TAPTITE;BH,+,-,S,M4,L8,ZPC(WHT),SW	1	S.N.A
..2	T0562	6046-001013	STAND OFF;M3,L5,Ni PLT,SUM24L,#4-40	4	S.N.A
..2	M2893	BN39-00785A	LEAD CONNECTOR;LS19PLMTSQ,UL1007#26,UL/C	1	S.A

6 Electrical Parts List

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
..2	M0174	BN44-00182B	IP BOARD;IP-43130A(BWVE),226BW,3.0 ~5.0m	1	S.A
..2		BN61-02426A	BRACKET-SHIELD;S/M 203B,SPTe,T0.3	1	S.N.A
..2	M0014	BN94-01445J	ASSY PCB MAIN-CTZ,W/W;LS22MEH*	1	S.N.A
...3	T0245	0202-001492	SOLDER-WIRE FLUX;HSE-02 LFM48 SR-34 S,-,	0.003	S.N.A
...3	CN102	3701-001173	CONNECTOR-DVI;24P,3R,FEMALE,ANGLE,AUF	1	S.A
...3	CN101	3701-001219	CONNECTOR-DSUB;15P,3R,FEMALE,ANGLE,AUF	1	S.A
...3	HDCP	BN97-00707A	ASSY HDCP;BN46-00018A,BR20/21BS_CS,MSTAR	1	S.N.A
....4		BN46-00018A	KEY CODE-CERTIFICATE;(HDCP KEY)PPM42M5S,	1	S.N.A
...3	T0174	BN97-01744K	ASSY SMD;LS22MEH*	1	S.N.A
....4	SUB05	0202-001477	SOLDER-CREAM;LST309-M,-,D20-45\$,96.5Sn/	0.821	S.N.A
....4	D100	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
....4	D101	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
....4	D102	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
....4	D103	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
....4	D104	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
....4	D105	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
....4	D106	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
....4	D107	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
....4	D108	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
....4	D109	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
....4	D110	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A
....4	D0254	0402-000553	DIODE-SCHOTTKY;SS24/B240,40V,200mA,DO-2	1	S.A
....4	D600	0402-001614	DIODE-RECTIFIER;S1G,400V,1A,DO-214AC,TP	1	S.A
....4	D603	0402-001614	DIODE-RECTIFIER;S1G,400V,1A,DO-214AC,TP	1	S.A
....4	D111	0403-000258	DIODE-ZENER;BZX84C5V6,5.2-6V,225mW,SOT-2	1	S.A
....4	D112	0403-000258	DIODE-ZENER;BZX84C5V6,5.2-6V,225mW,SOT-2	1	S.A
....4	ZD100	0403-001411	DIODE-ZENER;-5.49-5.73V,200mW,SOD-323,T	1	S.A
....4	ZD101	0403-001411	DIODE-ZENER;-5.49-5.73V,200mW,SOD-323,T	1	S.A
....4	ZD102	0403-001411	DIODE-ZENER;-5.49-5.73V,200mW,SOD-323,T	1	S.A
....4	D0254	0404-001020	DIODE-SCHOTTKY;BAT54C,30V,200mA,SOT-23,T	1	S.A
....4	D0254	0404-001020	DIODE-SCHOTTKY;BAT54C,30V,200mA,SOT-23,T	1	S.A
....4	ZD200	0406-001061	DIODE-TVS;MMQA5V6T3,5.32/5.6/5.88V,24W,S	1	S.A
....4	ZD201	0406-001061	DIODE-TVS;MMQA5V6T3,5.32/5.6/5.88V,24W,S	1	S.A
....4	ZD202	0406-001061	DIODE-TVS;MMQA5V6T3,5.32/5.6/5.88V,24W,S	1	S.A
....4	Q201	0501-000445	TR-SMALL SIGNAL;KTC3875S-Y,NPN,150mW,SOT	1	S.A
....4	Q203	0501-000445	TR-SMALL SIGNAL;KTC3875S-Y,NPN,150mW,SOT	1	S.A
....4	Q204	0501-000445	TR-SMALL SIGNAL;KTC3875S-Y,NPN,150mW,SOT	1	S.A
....4	Q601	0501-000445	TR-SMALL SIGNAL;KTC3875S-Y,NPN,150mW,SOT	1	S.A
....4	Q401	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	S.A
....4	Q402	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	S.A
....4	U290	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	S.A
....4	Q409	0505-001165	FET-SILICON;SI3443BDV,P,-20V,+4.4A,65mo	1	S.A
....4	IC112	1103-000129	IC-EEPROM;24C02,2Kbit,256x8Bit,SOP,8P,5x	1	S.A
....4	IC112	1103-001023	IC-EEPROM;24C08,8Kbit,1Kx8Bit,SOP,8P,5x4	1	S.A
....4	IC603	1202-000164	IC-VOLTAGE COMP.;393,SOP,8P,150MIL,DUAL,	1	S.A
....4	IC204	1203-001824	IC-VOL. DETECTOR;7042,SOT-89,3P,-,PLASTI	1	S.A
....4	IC702	1203-002843	IC-DC/DC CONVERTER;AP1501-50K5A,TO-263-5	1	S.A

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
....4	T0087	1203-003695	IC-POSIFIXED REG.;NCP1117ST3T3G,SOT-22	1	SA
....4	T0087	1203-003696	IC-POSIFIXED REG.;NCP1117DT18T5G,DPAK,3	1	SA
....4	R608	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	SA
....4	R274	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R275	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R276	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R277	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	SA
....4	R100	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R101	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R102	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R103	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R104	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R105	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R106	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R107	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R204	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R205	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	SA
....4	R111	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R113	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R114	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R117	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R118	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R120	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R132	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R202	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R203	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R206	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R207	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R212	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R213	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R216	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R245	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R250	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R251	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R252	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R255	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R401	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	SA
....4	R108	2007-000080	R-CHIP;2Kohm,5%,1/10W,TP,1608	1	SA
....4	R123	2007-000080	R-CHIP;2Kohm,5%,1/10W,TP,1608	1	SA
....4	R270	2007-000080	R-CHIP;2Kohm,5%,1/10W,TP,1608	1	SA
....4	R208	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	SA
....4	R209	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	SA
....4	R218	2007-000083	R-CHIP;3Kohm,5%,1/10W,TP,1608	1	SA
....4	R229	2007-000083	R-CHIP;3Kohm,5%,1/10W,TP,1608	1	SA
....4	R219	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R220	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA
....4	R223	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	SA

6 Electrical Parts List

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
....4	R230	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
....4	R234	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
....4	R729	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A
....4	R600	2007-000088	R-CHIP;7.5Kohm,5%,1/10W,TP,1608	1	S.A
....4	R109	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R125	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R126	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R130	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R131	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R200	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R201	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R210	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R211	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R214	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R215	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R217	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R239	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R253	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R254	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R271	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R400	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R404	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R405	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R601	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R602	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R612	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R610	2007-000091	R-CHIP;12Kohm,5%,1/10W,TP,1608	1	S.A
....4	R402	2007-000102	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A
....4	R232	2007-000309	R-CHIP;10ohm,5%,1/10W,TP,1608	1	S.A
....4	R273	2007-000309	R-CHIP;10ohm,5%,1/10W,TP,1608	1	S.A
....4	R605	2007-000616	R-CHIP;24Kohm,5%,1/10W,TP,1608	1	S.A
....4	R116	2007-000821	R-CHIP;390ohm,1%,1/10W,TP,1608	1	S.A
....4	R235	2007-000821	R-CHIP;390ohm,1%,1/10W,TP,1608	1	S.A
....4	R110	2007-001002	R-CHIP;510ohm,5%,1/10W,TP,1608	1	S.A
....4	R121	2007-001044	R-CHIP;56ohm,5%,1/10W,TP,1608	1	S.A
....4	R122	2007-001044	R-CHIP;56ohm,5%,1/10W,TP,1608	1	S.A
....4	R231	2007-001157	R-CHIP;750ohm,5%,1/10W,TP,1608	1	S.A
....4	R112	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	S.A
....4	R115	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	S.A
....4	R119	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	S.A
....4	C215	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C723	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C724	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A
....4	C201	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	S.A
....4	C202	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	S.A
....4	C642	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	S.A
....4	C109	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
....4	C216	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C217	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C218	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	SA
....4	C116	2203-000384	C-CER,CHIP;0.015nF,5%,50V,C0G,1608	1	SA
....4	C115	2203-000626	C-CER,CHIP;0.022nF,5%,50V,C0G,1608	1	SA
....4	C210	2203-000626	C-CER,CHIP;0.022nF,5%,50V,C0G,1608	1	SA
....4	C211	2203-000626	C-CER,CHIP;0.022nF,5%,50V,C0G,1608	1	SA
....4	C100	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C101	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C103	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C106	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C107	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C108	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C110	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C111	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C112	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C117	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C118	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C119	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C120	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C121	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C122	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C123	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C124	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C125	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C200	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C203	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C204	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C205	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C206	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C209	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C212	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C213	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C214	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C436	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C600	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C601	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C603	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C604	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C605	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C612	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C613	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C614	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C615	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C617	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C618	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA
....4	C619	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	SA

6 Electrical Parts List

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
....4	C620	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A
....4	C621	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A
....4	C622	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A
....4	C623	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A
....4	C626	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A
....4	C627	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A
....4	C628	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A
....4	C630	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A
....4	C631	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A
....4	C635	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A
....4	C636	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A
....4	C637	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A
....4	C640	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A
....4	C718	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A
....4	C726	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A
....4	C208	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A
....4	C220	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A
....4	C309	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A
....4	C606	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A
....4	C610	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A
....4	C641	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A
....4	C207	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
....4	C602	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
....4	C611	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
....4	C616	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
....4	C624	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
....4	C625	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
....4	C632	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
....4	C633	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
....4	C634	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
....4	C638	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A
....4	C435	2402-001128	C-AL,SMD;100µF,20%,16V,-,TP,6.3X5.7mm	1	S.A
....4	C629	2402-001128	C-AL,SMD;100µF,20%,16V,-,TP,6.3X5.7mm	1	S.A
....4	C639	2402-001128	C-AL,SMD;100µF,20%,16V,-,TP,6.3X5.7mm	1	S.A
....4	C719	2402-001128	C-AL,SMD;100µF,20%,16V,-,TP,6.3X5.7mm	1	S.A
....4	C725	2402-001128	C-AL,SMD;100µF,20%,16V,-,TP,6.3X5.7mm	1	S.A
....4	X1	2801-003667	CRYSTAL-SMD;14.31818MHz,30ppm,28-AAN,16p	1	S.A
....4	T0568	3301-001145	BEAD-SMD;60ohm,4516,TP,70ohm/45MHz,82ohm	1	S.N.A
....4	T0568	3301-001407	BEAD-SMD;30ohm,1608,300mA,TP,,,0.4ohm	1	S.N.A
....4	T0568	3301-001407	BEAD-SMD;30ohm,1608,300mA,TP,,,0.4ohm	1	S.N.A
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A
....4	CN400	3708-001150	CONNECTOR-FPC/FFC/PIC;30P,1mm,SMD-A,SN,Y	1	S.A
....4	CN330	3711-005503	HEADER-BOARD TO CABLE;BOX,9P,1R,2mm,SMD-	1	S.A
....4	CN330	3711-005509	HEADER-BOARD TO CABLE;BOX,4P,1R,1.25mm,S	1	S.A
....4	L701	BN27-00008A	COIL CHOKE-SMD;SMD12*12*8.5,GH15/17PS,22	1	S.A
....4	MAIN	BN97-01750M	ASSY MICOM-CTZ,W/W;M-ME22H0CDA-1002,(27D	1	S.N.A
.....5	IC115	1107-001614	IC-FLASH MEMORY;MX25L1005,1Mbit,1Mx1Bit,	1	S.N.A
....4	IC109	1205-003255	IC-LCD CONTROLLER;SE758MRH-LF,PQFP,128P,	1	S.A
....4	C722	2402-001079	C-AL,SMD;100uF,20%,35V,WT,TP,10.3x10.3x1	1	S.A
....4	T0077	BN41-00885B	PCB MAIN;MENDEL VE,CM-3,2,1,1,1.6T,179.6	1	S.N.A
..2	M0006	BN96-05498A	ASSY SHIELD P-COVER;MENDEL 21.6,SECC T1.	1	S.N.A
...3		BN61-02429D	STUD-PEM;PNB,M2.8,D7,L20,ZPC(SIL),SUM24L	1	S.N.A
...3	M0001	BN63-01774A	SHIELD-INSULATOR;BI17/19BS,PET,T0.35	1	S.N.A
...3	M0107	BN63-03514A	SHIELD-COVER;LS22MEW,SECC,T1.0	1	S.N.A
...3		BN61-02429E	STUD-PEM;PNB,M2.8,D7,L24,ZPC(SIL),SUM24L	1	S.N.A
..2	M0251	BN96-05621A	ASSY CABLE P;Mendel,FLAT CABLE,-,170mm,3	1	S.A
0.1	M0113	BN92-02267A	ASSY P/MATERIAL;LS22MEWSFV/XAA	1	S.N.A
..2	T0376	6902-000061	BAG AIR;LDPE,T0.2,L1000,W500,TRP,...	0.011	S.N.A
..2	T0376	6902-000379	BAG AIR;LDPE,T0.2,W1000,L1800,TRP,-,-	0.002	S.N.A
..2	T0003	6902-000604	BAG WRAPPING;LDPE,T0.02,W500,L10000,TRP,	1.37	S.N.A
..2	M0081	6902-000609	BAG ROLL;LDPE,T0.05,W2400,L1000,TRP,-,-	0.024	S.N.A
..2	T0524	6902-000758	BAG PE;HDPE/HDPE/NITRON(DOUBLE),T0.015/T	1	S.N.A
0.1	M0019	BN92-02330E	ASSY LABEL;LS22MEWSFV/XSF	1	S.N.A
0.1	M0003	BN92-02334D	ASSY BOX;LS22MEWSFV/XSF	1	S.N.A
..2	BOX	BN69-01596D	BOX-04 SET S/M226BW(LS22MEW),CB,SY-01,A,	1.01	S.N.A
0.1	M0045	BN92-02820Z	ASSY ACCESSORY;LS22MEHSFV/XSF	1	S.N.A
..2	M0114	BN39-00244E	CBF SIGNAL;MO15PS,15P/15P,20276-N,1830mm	1	S.A
..2	M0125	BN39-00245F	CBF SIGNAL-DVI(D);1703FP,24P/24P,20276-D	1	S.A
..2	M0027	BN96-04541A	ASSY STAND P-BASE;LS20MEW,ABS HB,BK26+BK	1	S.A
...3	M0081	6008-00100J	SCREW-TAPTITE;FH,+,B,M3,L8,ZPC(BLK),SWRC	4	S.N.A
...3	M0142	BN61-00251A	FOOT-RUBBER;GH17BS,RUBBER,T1.6	4	S.N.A
...3		BN61-01235A	SUPPORT-BRKT BASE;MJ19AS/BS,SECC,T1.6	1	S.N.A
...3	CIS4	BN61-01717A	HOLDER-STAND;BIZET,NI PLT,CH,+,M4,L11(5)	1	S.A
...3		BN63-02746A	COVER-STAND,TOP;LS19ME,ABS,HB,BK26,HIGH	1	S.N.A
...3	T0004	BN63-02963A	COVER-STAND BASE;LS20MEW,HIPS HB,BK07	1	S.N.A
...3	M0412	BN63-02964A	COVER-SWIVEL BASE;LS20MEW,HIPS HB,BK07	1	S.N.A
...3		BN63-02965A	COVER-SWIVEL RING;LS20MEW,POM HB,BLK	1	S.N.A
...3		BN68-00786F	MANUAL FLYER-02,QSG;Bizet Stand Manual,S	1	S.N.A
...3	T0524	6902-000110	BAG PE;LDPE,T0.05,W250,L400,TRP,28,2	1	S.N.A
...3	CCM1	BN63-02183D	COVER-SHEET;RhcM,PE Vinyl,T0.05,680mm,20	0.25	S.N.A
..2	M0045	BN96-05725X	ASSY ACCESSORY;LS22MEHSFV/XSF	1	S.A
...3	T0268	3903-000082	CBF-POWER CORD;DT,CN,IP3/YES(A),(IEC C1	1	S.A

6 Electrical Parts List

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA
...3	T0524	6902-000110	BAG PE;LDPE,T0.05,W250,L400,TRP,28,2	1	S.N.A
...3	M0113	BH68-70455A	CARD-TESTED GOODS;ALL (CHINA),SAMAUNG,CH	1	S.N.A
...3	ACCESSORY	BH75-00146B	UNIT-10,WARRANTY;CHINA,-,ASS'Y-W/CARD,BH	1	S.N.A
...4		BH68-00297E	MANUAL FLYER-10,WARRANTY CARD;SAMSUNG BA	1	S.N.A
...4	CIS	BH68-00297F	MANUAL FLYER-10,WARRANTY CARD;ENVELOPE,S	1	S.N.A
...3	ACCESSORY	BN63-02368A	CLOTH;LS07BTT,SUEDE,0.6,160,120	1	S.N.A
...3	ACCESSORY	BN68-01237A	MANUAL FLYER-QSG;COMM,W/W(L12),Mojo 100g	1	S.N.A
...3	M0215	BN96-03250H	ASSY MANUAL P-IB+QSG;206BW,226BW,W/W,L30	1	S.N.A
...4	QSG	BH68-00376L	MANUAL FLYER-06,QSG;LCDQUICK SETUP GUIDE	1	S.N.A
...4	I/B	BN59-00521H	S/W DRIVER-03,IB;206BW,226BW,W/W,SyncMas	1	S.N.A

The diagram illustrates the system architecture and signal flow for the Gm5822LF camera module. It is divided into two main sections: **A** (Digital/Control) and **B** (Power/Analog).

Section A: Digital/Control

- PC (PC) DIGITAL:** Provides digital signals to the module, including $Rx2+$, $Rx2-$, $Rx1+$, $Rx1-$, $Rx0+$, $Rx0-$, $RxC+$, and $RxC-$.
- PC Signal:** A dedicated signal line connecting the PC to the module.
- Module Core:** The **Gm5822LF** module contains a **TMDS** interface, an **ADC/IMAGE SCALER/LVDS** block, and **Flash Memory**.
- FUNCTION PBA:** A Function Power Block Amplifier that interfaces with the module's digital control lines.
- LVDS Signal_Even/Odd:** The module outputs LVDS signals to the **LCD PANEL**.
- 24MHZ:** A clock signal provided to the module's internal logic.
- SDA, SCL:** I2C communication lines between the module and the **FUNCTION PBA**.

Section B: Power/Analog

- IP Board:** Provides the primary power supply to the module, including **+14V**, **+5V**, and **Backlight PWM**.
- Power Regulation:** The **+5V** and **+14V** lines pass through a **3.3V_Scaler regulator** and a **1.8V_Scaler regulator** to provide stable power to the module's internal components.
- Analog Inputs:** The module receives **R** (Red), **G** (Green), and **B** (Blue) video signals, along with **HSYNC** and **VSYNC** synchronization signals, from the **(PC) ANALOG** input.
- Backlight Enable:** A control signal derived from the **Backlight PWM** line, used to enable the display.

<http://www.wjel.net>

EEPROM

scaler

Flash memory

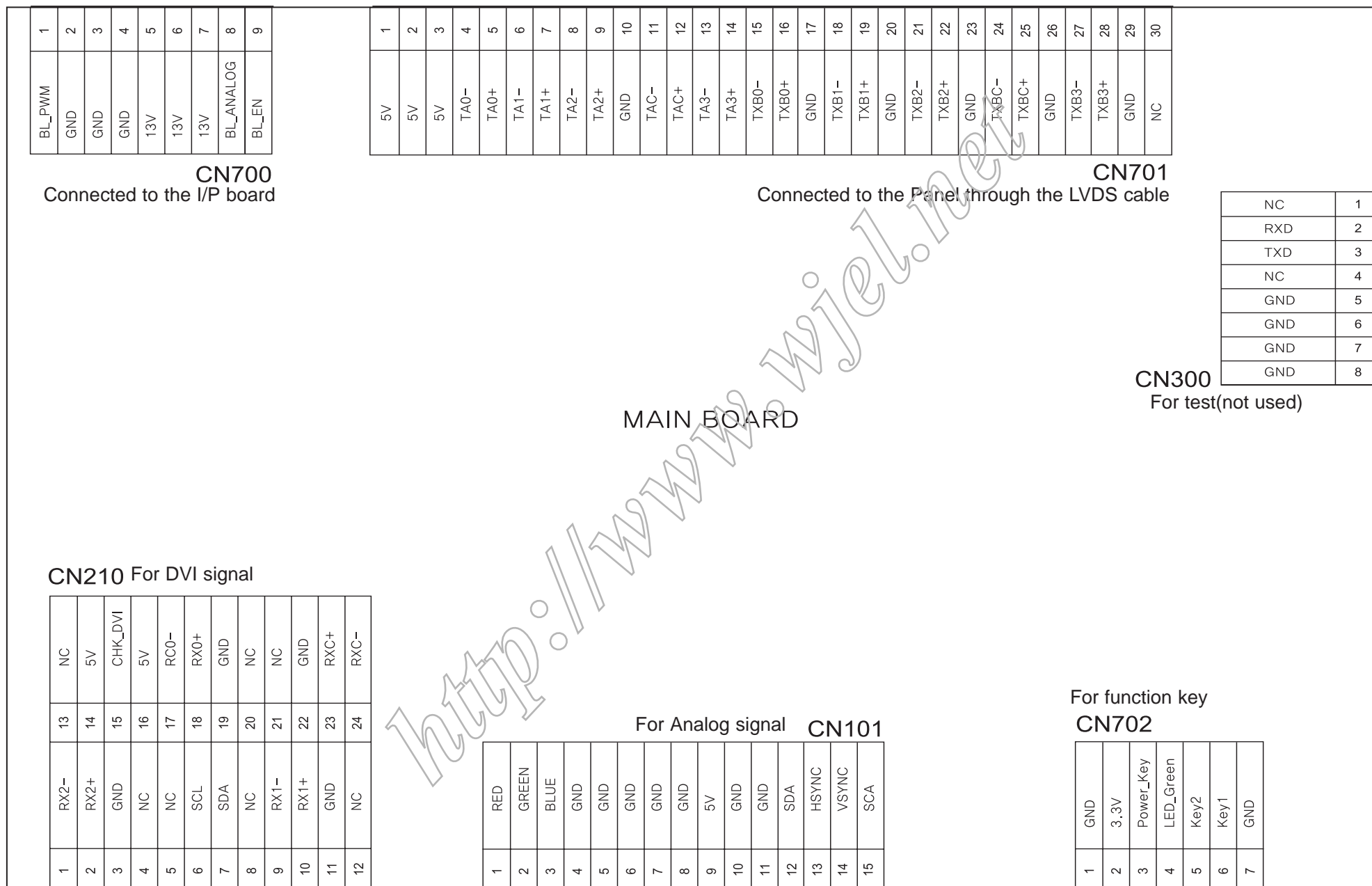
SDRAM Memory

EEPROM

FET Array

<http://www.wjel.net>

8 Wiring Diagram



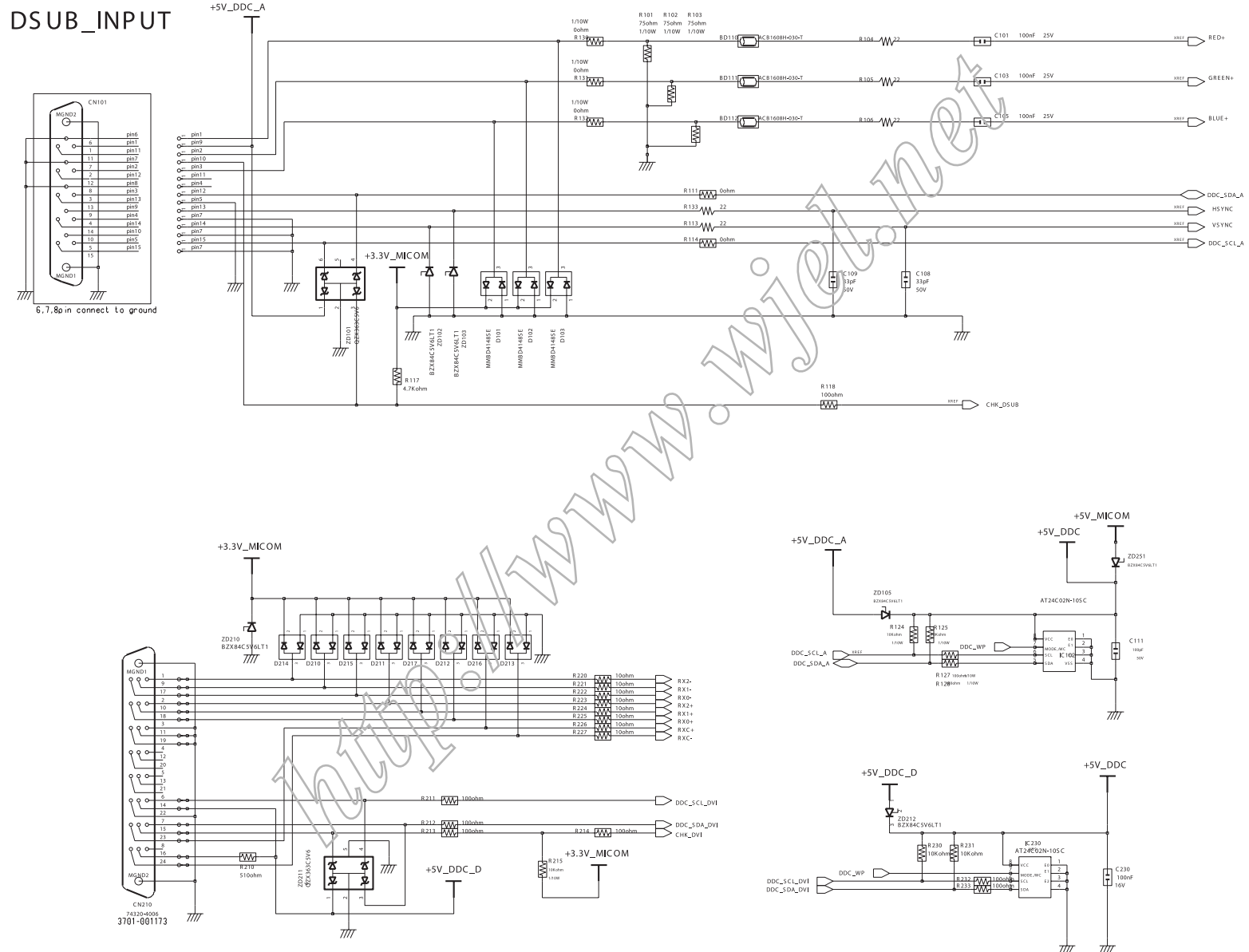
Memo

<http://www.wjel.net>

9 Schematic Diagrams

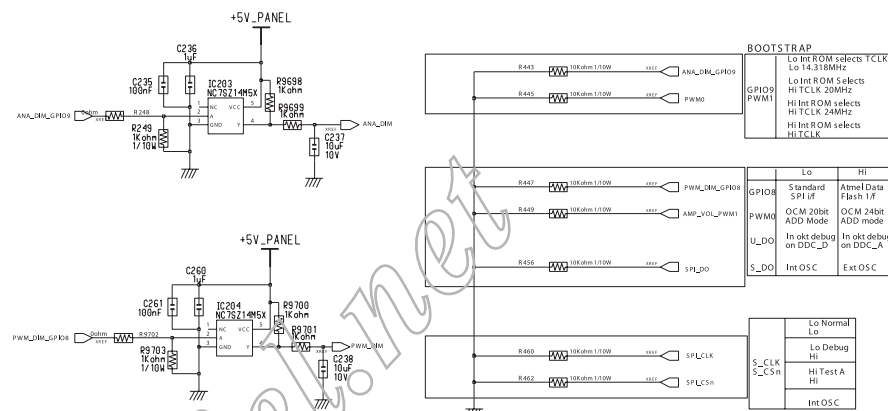
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9-1 Schematic Diagrams



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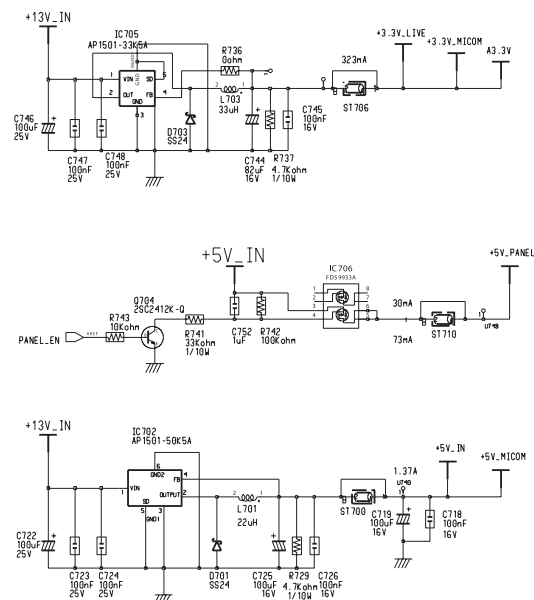
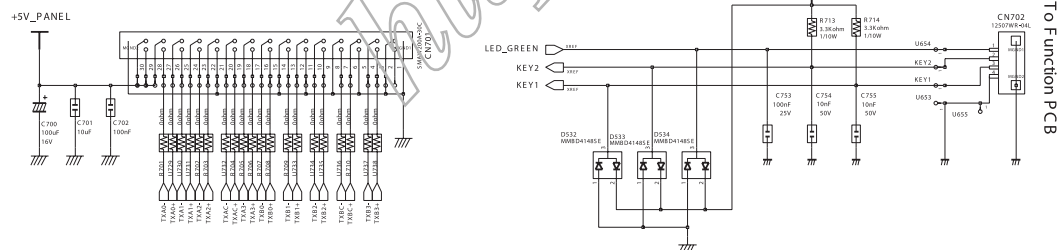




The schematic diagram of the IP-BOARD shows the following components and connections:

- Connectors:**
 - IP Board:** CN700 (12 pins).
 - Power:** +13V_IN, +3.3V_LIVE, +3.3V_MICOM, +1.8V, +1.8V.
 - Control:** PWM_DIM, ANA_DIM, BL_EN.
- Resistors:**
 - R700: 50ohm (pull-up for PWM_DIM).
 - R706: 100k 5V (pull-up for IP706).
 - R711: 50ohm (pull-up for ANA_DIM).
 - R712: 10k 5V (pull-up for IP712).
 - R716: 10k 5V (pull-up for BL_EN).
 - R718: 24k 5V (pull-up for BL_EN).
 - R720: 10k 5V (pull-up for BL_EN).
 - R722: 1/100ohm (pull-up for BL_EN).
 - R723: 10k 5V (pull-up for BL_EN).
 - R724: 10k 5V (pull-up for BL_EN).
 - R725: 10k 5V (pull-up for BL_EN).
 - R726: 10k 5V (pull-up for BL_EN).
 - R727: 10k 5V (pull-up for BL_EN).
 - R728: 10k 5V (pull-up for BL_EN).
 - R729: 10k 5V (pull-up for BL_EN).
 - R730: 10k 5V (pull-up for BL_EN).
 - R731: 10k 5V (pull-up for BL_EN).
 - R732: 10k 5V (pull-up for BL_EN).
 - R733: 10k 5V (pull-up for BL_EN).
 - R734: 10k 5V (pull-up for BL_EN).
 - R735: 10k 5V (pull-up for BL_EN).
 - R736: 10k 5V (pull-up for BL_EN).
 - R737: 10k 5V (pull-up for BL_EN).
 - R738: 10k 5V (pull-up for BL_EN).
 - R739: 10k 5V (pull-up for BL_EN).
 - R740: 10k 5V (pull-up for BL_EN).
 - R741: 10k 5V (pull-up for BL_EN).
 - R742: 10k 5V (pull-up for BL_EN).
 - R743: 10k 5V (pull-up for BL_EN).
 - R744: 10k 5V (pull-up for BL_EN).
 - R745: 10k 5V (pull-up for BL_EN).
 - R746: 10k 5V (pull-up for BL_EN).
 - R747: 10k 5V (pull-up for BL_EN).
 - R748: 10k 5V (pull-up for BL_EN).
 - R749: 10k 5V (pull-up for BL_EN).
 - R750: 10k 5V (pull-up for BL_EN).
- Capacitors:**
 - C706: 100nF 5V (decoupling for IP706).
 - C707: 100nF 5V (decoupling for IP707).
 - C708: 100nF 5V (decoupling for IP708).
 - C709: 100nF 5V (decoupling for IP709).
 - C710: 100nF 5V (decoupling for IP710).
 - C711: 100nF 5V (decoupling for IP711).
 - C712: 100nF 5V (decoupling for IP712).
 - C713: 100nF 5V (decoupling for IP713).
 - C714: 100nF 5V (decoupling for IP714).
 - C715: 100nF 5V (decoupling for IP715).
 - C716: 100nF 5V (decoupling for IP716).
 - C717: 100nF 5V (decoupling for IP717).
 - C718: 100nF 5V (decoupling for IP718).
 - C719: 100nF 5V (decoupling for IP719).
 - C720: 100nF 5V (decoupling for IP720).
 - C721: 100nF 5V (decoupling for IP721).
 - C722: 100nF 5V (decoupling for IP722).
 - C723: 100nF 5V (decoupling for IP723).
 - C724: 100nF 5V (decoupling for IP724).
 - C725: 100nF 5V (decoupling for IP725).
 - C726: 100nF 5V (decoupling for IP726).
 - C727: 100nF 5V (decoupling for IP727).
 - C728: 100nF 5V (decoupling for IP728).
 - C729: 100nF 5V (decoupling for IP729).
 - C730: 100nF 5V (decoupling for IP730).
 - C731: 100nF 5V (decoupling for IP731).
 - C732: 100nF 5V (decoupling for IP732).
 - C733: 100nF 5V (decoupling for IP733).
 - C734: 100nF 5V (decoupling for IP734).
 - C735: 100nF 5V (decoupling for IP735).
 - C736: 100nF 5V (decoupling for IP736).
 - C737: 100nF 5V (decoupling for IP737).
 - C738: 100nF 5V (decoupling for IP738).
 - C739: 100nF 5V (decoupling for IP739).
 - C740: 100nF 5V (decoupling for IP740).
 - C741: 100nF 5V (decoupling for IP741).
 - C742: 100nF 5V (decoupling for IP742).
 - C743: 100nF 5V (decoupling for IP743).
 - C744: 100nF 5V (decoupling for IP744).
 - C745: 100nF 5V (decoupling for IP745).
 - C746: 100nF 5V (decoupling for IP746).
 - C747: 100nF 5V (decoupling for IP747).
 - C748: 100nF 5V (decoupling for IP748).
 - C749: 100nF 5V (decoupling for IP749).
 - C750: 100nF 5V (decoupling for IP750).
- ICs:**
 - IC701: LM333D (comparator).
 - IC702: LM333D (comparator).
 - IC703: LM333D (comparator).
 - IC704: LM333D (comparator).
 - IC705: LM333D (comparator).
 - IC706: LM333D (comparator).
 - IC707: LM333D (comparator).
 - IC708: LM333D (comparator).
 - IC709: LM333D (comparator).
 - IC710: LM333D (comparator).
 - IC711: LM333D (comparator).
 - IC712: LM333D (comparator).
 - IC713: LM333D (comparator).
 - IC714: LM333D (comparator).
 - IC715: LM333D (comparator).
 - IC716: LM333D (comparator).
 - IC717: LM333D (comparator).
 - IC718: LM333D (comparator).
 - IC719: LM333D (comparator).
 - IC720: LM333D (comparator).
 - IC721: LM333D (comparator).
 - IC722: LM333D (comparator).
 - IC723: LM333D (comparator).
 - IC724: LM333D (comparator).
 - IC725: LM333D (comparator).
 - IC726: LM333D (comparator).
 - IC727: LM333D (comparator).
 - IC728: LM333D (comparator).
 - IC729: LM333D (comparator).
 - IC730: LM333D (comparator).
 - IC731: LM333D (comparator).
 - IC732: LM333D (comparator).
 - IC733: LM333D (comparator).
 - IC734: LM333D (comparator).
 - IC735: LM333D (comparator).
 - IC736: LM333D (comparator).
 - IC737: LM333D (comparator).
 - IC738: LM333D (comparator).
 - IC739: LM333D (comparator).
 - IC740: LM333D (comparator).
 - IC741: LM333D (comparator).
 - IC742: LM333D (comparator).
 - IC743: LM333D (comparator).
 - IC744: LM333D (comparator).
 - IC745: LM333D (comparator).
 - IC746: LM333D (comparator).
 - IC747: LM333D (comparator).
 - IC748: LM333D (comparator).
 - IC749: LM333D (comparator).
 - IC750: LM333D (comparator).

LVDS



Memo

<http://www.wjel.net>